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Collaborative conflict and strategic decision making : modeling organizational factors for decision commitment

John Welby Wheeler

To the Graduate Council:

I am submitting herewith a dissertation written by John Welby Wheeler entitled "Collaborative conflict and strategic decision making : modeling organizational factors for decision commitment." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Business Administration.

Michael J. Stahl, Major Professor

We have read this dissertation and recommend its acceptance:

Accepted for the Council:
Dixie L. Thompson

Vice Provost and Dean of the Graduate School

(Original signatures are on file with official student records.)

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Robert T. Ladd

Alex Miller

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Vice Provost and Dean of
Graduate Studies

Collaborative Conflict and Strategic Decision Making: Modeling Organizational Factors for Decision Commitment

A Dissertation
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John Welby Wheeler
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ABSTRACT

This study investigates the relationship between group decision process characteristics and group members' decision commitment. A conceptual model was developed drawing on the collaboration literature and the conflict literature. The model provides the basis for propositions concerning the positive relationship between expressed substantive conflict during the decision process and the level of decision commitment by each group member. Likewise, a positive relationship was proposed between the collaborative behavior exhibited during the group decision process and the level of decision commitment.

Decision modeling based on behavioral decision theory was used to gather data to test these relationships. The decision exercise was designed to ask each respondent to make a series of 32 decisions based on various combinations of decision process and decision content variables as independent variables. This methodology provided a combination of relevant and realistic decision contexts and rigor through the experimental control of variables. Another benefit of this methodology is the opportunity to develop a decision model for each respondent, as well as a decision model for the sample as a whole.

Evidence was found to strongly support the hypothesized relationships between the group decision process characteristics and the members' decision commitment. Specifically, it was found that there was a diversity of decision models used by the respondents, with a high level of internal consistency within each respondent's decision criteria (high individual R^2), but a much lower consistency across respondents (lower group R^2). Sixteen percent of the respondents used only the decision content variable in their commitment decision. Fifty-four percent used only decision process variables (one or both) and twenty-seven percent used some combination of content and process variables. This study breaks new ground by using decision modeling to provide evidence of the importance of process characteristics in strategic-level group decisions.

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CHAPTER 1

INTRODUCTION

Strategic decisions are, by definition, worthy of much attention and study by academicians and practitioners alike. Indeed, the content and process of strategic decisions are at the heart of the field of strategic management (Eisenhardt, 1999). This study will focus on one particular aspect of the strategic decision process - the utilization of the natural differences of perspective that members of a strategic decision-making group bring to the process.

Strategic decisions define the relationship between the organization and its environment and provide direction to decision makers throughout the organization (Shirley, 1982). They likewise provide the basis for a firm's competitive advantage (Porter, 1996; Markides, 1999). Strategic decisions have been described as very complex (Schwenk, 1988), messes (Ackoff, 1974), ill-structured (Mitroff & Emshoff, 1979), and even wicked (Gilmore & Camillas, 1996; Eden & Ackermann, 1998) because of the large scale consequences and the uncertainty and ambiguity involved. Therefore, strategic decisions generally will have no single right solution or alternative. Members of an organization, and of particular interest, those involved with strategic-level decisions, will have different perspectives and conclusions as to the best alternative for the decision at hand. These different perspectives will result from their differences in values, past experiences, and personality types. Such differences among group members are dealt with in the decision process in a variety of ways, but frequently not in a productive manner.

It is assumed often in the strategic management literature that strategic decisions are the domain of the CEO, or at least that the CEO makes the final decision with input from the rest of the top management team. Johnson and Johnson (1997) identify a variety of group decision methods, ranging from a designated leader making the decision without group discussion to a consensus decision process. Perfect or complete consensus is achieved when each member of the group agrees on the best alternative. With the ill-structured nature of strategic decisions (and all the attending uncertainty and ambiguity), such complete consensus is not likely to occur on a frequent basis.

A more reasonably sought outcome is a group decision choice in which all members take ownership of, and therefore commit their best efforts to, its successful implementation, even though the final choice is not everyone's preferred choice. Ownership of and commitment to a decision by a member who does not perceive it as the best solution is possible, argue Johnson and Johnson (1997), if the decision process exhibits certain characteristics. This study will investigate key characteristics of this type of decision process.

Individual ownership of and commitment to a group decision frequently do not occur. The extensive nature of the literature devoted to other group decision processes and outcomes (political maneuvering, negotiation, compromise, and groupthink) indicates the level of difficulty in achieving this type of consensus. Groupthink is a common outcome of the group decision process in which a false sense of consensus is achieved (Janis, 1972). Political maneuvering and the negotiation process may result in ownership of and commitment to the decision, but only on the part of the winning subgroup. And in the case of compromise, there may be little ownership or commitment by any of the group members.

Collaboration

One purpose of this study will be to investigate the impact of a collaborative approach to the strategic decision process on the group member's ownership of and commitment to the group decision. Gray defines collaboration as "a process through which parties who see different aspects of a problem can constructively explore their differences and search for solutions that go beyond their own limited vision of what is possible" (1989: 5). She argues that such a collaborative process is dependent on 1) a mutual recognition of interdependence among stakeholders to the decision, 2) a mutual respect for differences among those stakeholders, and 3) a joint ownership of and responsibility for the resulting decision. She concludes by stating that such a collaborative decision process can result in improved decision quality and increased commitment to the decision. Collaboration, as defined here, is not settling for less, but searching for a better solution that will meet the core needs of those involved in the decision. Mary Parker Follett made this argument in 1927 by identifying only three ways to deal with substantive differences – hierarchical domination, compromise, and integration (Follett, 1995). She describes integration as the creation of a new solution to meet the needs of all parties rather than dealing with the existing and often mutually exclusive alternatives brought to the process by the parties involved.

Maintaining a collaborative approach while discussing the complexities of strategic decisions from the various viewpoints represented in the group can be difficult. Mintzberg, Jorgensen, Dougherty, and Westley (1996) argue that collaboration is dependent on mutual trust among the group and an appreciation of the expertise others bring to the process. But, emotion-laden communication can deteriorate into an

unproductive decision process in which members resort to political posturing and lose sight of the goal of a better solution.

Substantive Conflict

The effect of conflict on the strategic decision process has received considerable attention in the management literature. This literature has drawn on a broader set of conflict research, to varying degrees, from the fields of psychology, sociology, and communications. In much of the management literature there seems to be an underlying assumption that there is a much greater likelihood of experiencing the negative effects of expressed conflict than experiencing the benefits. Such negative effects as animosity, a breakdown in communications, lack of cooperation on future endeavors, a slower decision process, and even retaliation can have a significant impact on organizational effectiveness. As a result, many decision-making groups pursue a more harmonious process. Many researchers and practitioners have argued, though, that the potential benefits of examining a variety of opposing viewpoints on an issue are too important to allow the fear of conflict to prevent the expression of such opposing perspectives.

There is growing interest in applying the distinction between cognitive conflict and affective conflict to the study of strategic decision making (Eisenhardt, Kahwajy, & Bourgeois, 1997; Amason, 1996; Jehn, 1997). Cognitive conflict is defined as " a conflict of ideas in the group and disagreement about the content and issues of the task" (Jehn, 1997: 88) and affective conflict is defined as personalized disagreement leading to personal criticism and animosity (Amason, 1996). The general conclusion of this stream of research is that affective conflict reduces the effectiveness of the decision process and cognitive conflict can increase the effectiveness if the tendency to shift into affective

conflict can be avoided. This tendency is strongest in the strategic decision process because of the stakes involved.

Another purpose of this study is to bring together the collaboration research and the conflict research and to examine directly the relationship between these two constructs. The collaboration literature discusses the necessity of dealing with differences of viewpoint without directly testing the relationship between collaboration and conflict. The conflict literature focuses on the level and type of emotions that are exhibited in decision-making conflict and the potentially harmful effects they can have without directly examining the effect of a collaborative approach to conflict management.

Hampden-Turner (1970) addressed the issue from the perspective of Lawrence and Lorsch's concepts of differentiation and integration. He argued that in order for the group to achieve any expected synergy from working together as a group, the group must be sufficiently differentiated in their viewpoints. Further, the expected synergy in the integration process is dependent on a mutual respect among the group members and the opportunity to openly communicate their ideas and have their ideas considered. Hampden-Turner's argument can be viewed as indicating that expressed substantive conflict (a representation of differentiation) without a collaborative process (necessary for integration) will not be sufficient to result in the potential group benefit of synergy.

Not only is it of value to examine the extent of collaboration within the decision-making group, but also it is interesting to examine the extent to which the organization establishes an atmosphere that at least makes it acceptable to express differences openly. As early as 1974 Robbins identified three distinct organizational philosophies toward conflict. Two common means of dealing with conflict are 1) avoiding conflict because it is believed to be destructive by nature and 2) accepting conflict as a natural consequence of human interaction in need of cautious management. Less common is

an organizational environment that encourages and supports conflict intended to increase decision quality by expressing differences of perspectives and thoroughly examining existing and newly created alternatives. Robbins argued that the organization's general choice to avoid, accept, or encourage conflict impacts the likelihood of stagnant thinking, the adequacy of decisions, and ultimately the long-term survival of the organization (Robbins, 1974).

The following research questions will be the focus, then, of this study:

1 What is the relationship between collaboration in the group strategic decision process and decision commitment on the part of group members?

2 What is the nature of the interrelationship between collaboration and expressed substantive conflict in the strategic decision process?

3 To what extent is the relationship between collaboration and expressed substantive conflict influenced by the organization's tendency to accept or encourage the open expression of differences in ideas and perspectives?

Relevance of the Study

All organizations face strategic-level decisions. The limitations of common methods of conflict management within the decision group (groupthink, political maneuvering, negotiation and compromise) have been described in both the academic and practitioner literature. This study, by systematically exploring the relationship between collaboration and expressed substantive conflict, will offer insight to organizations wanting to capture some of the unrealized potential synergies of the group decision process at the strategic level.

This study will focus on the Christian college and university context for the strategic decision process. Although these organizations have a tendency to have a stronger sense of shared values, there is a diversity of perspectives across campus in

regard to certain strategic issues and more specifically in this study, university-wide curriculum issues. Focusing on this group of organizations with similar overall missions will provide the opportunity to examine the effect of various levels of shared values and other university-level characteristics on the collaborative conflict process.

CHAPTER 2

REVIEW OF THE LITERATURE

This chapter begins with a description of strategic decision processes. A discussion follows of the consensus literature, focusing on various definitions of consensus and its relationship with firm performance; the interpersonal conflict literature, focusing on the distinction between productive and unproductive conflict; and the collaboration literature, focusing on its benefits to group processes. The chapter concludes by describing the conceptual model that has been developed for this study to examine the interrelationship between collaboration and expressed substantive conflict and their effect on strategic decision commitment.

Strategic Decision Process

Strategic decisions are defined as complex, ill-structured, and nonroutine decisions that involve large resource commitments with potentially large gains or losses at stake (Schwenk, 1988). Mintzberg, Raisinghani, and Theoret defined them as specific commitments to action that are important "in terms of the actions taken, the resources committed, or the precedents set" (1976: 246). They stated that these commitments to action are preceded by unstructured decision processes that "have not been encountered in quite the same form and for which no predetermined and explicit set of ordered responses exists in the organization" (1976: 246).

The strategic decision process literature is less extensive than the literature on strategy content, although it has been receiving more attention in recent years. Still, Rajagopalan, Rasheed, and Datta characterize the process literature as fragmented with

"limited cumulative theory building and empirical testing" (1993: 350). This fragmentation has resulted in many strategic decision process models identifying various categorizations and types. The literature is highly influenced by the rationally analytic conception of decision making, either advocating some form of the rational model, or describing its limitations and offering a more effective alternative, or using it as a point of reference to discuss one or more other models.

Mintzberg, Raisinghani, and Theoret (1976) developed a framework for analysis based on a field study of 25 decision-making processes, using structured interviews over a five-year period. They found strategic decision making typically to have three central phases (identification, development and selection, each with its own set of routines), three sets of supporting routines (decision control, decision communication, and political routines) and six dynamic factors (interrupts, scheduling delays, feedback delays, timing delays and speedups, comprehensive cycles, and failure recycles). This general framework, by providing a common set of terminology and a variety of elements to be combined in virtually infinite ways (with no time constraints or sequential orderings), is broad enough to be used in any study of strategic decision making. A common use of this framework to study strategic decision making and to compare specific models would have been quite beneficial to the field. In spite of a multitude of strategic decision making studies in the more than 20 years since its development, and many references to parts of the findings, there has not been a wide spread use of the framework itself.

Nutt (1984) studied 78 cases of decision making and developed a decision process typology with a different (but similar) set of components. Nutt refered to the work of Mintzberg, Raisinghani, and Theoret (1976) as a major contribution but chose not to use the framework. Five potential stages were identified as 1) formulation, 2) concept development, 3) detailing, 4) evaluating, and 5) implementation with steps of

search, synthesis, and analysis potentially in each of the five stages. Multiple interviews were conducted with two individuals involved with a completed project for each of the 78 service firms. Five decision process types were identified as 1) historical model, 2) off-the-shelf, 3) appraisal, 4) search and 5) nova with variations of each type. The historical model type uses practices of others to guide solution development by visiting others or recalling members' experiences at other organizations. The assumption is that since it worked elsewhere then it is a workable solution. It is assumed to be equivalent to a pilot project (why reinvent the wheel?). The off-the-shelf process attempts to identify the best available ideas by requesting vendors or consultants to submit tailored pre-packaged solutions for the organization's evaluation. Such competition among solutions will assumedly generate the best solution.

The appraisal process evaluates an idea that, at the time of the decision, has an unknown or controversial benefit and gathers evaluative evidence as the idea is implemented. The search process is used when the needs are poorly understood and a workable idea is not known. Yet, the search is expected to provide a ready-to-implement idea. The nova process is used in an attempt to create an innovative plan, without any direct attempt to identify what other organizations are doing. Time and cost constraints limit the number of alternatives developed. The results of this study indicate that decision makers prefer to use the ideas of other organizations and off-the-shelf ideas.

Frederickson (1983) compared the synoptic (rational) decision processes and incremental decision processes on five characteristics: 1) what initiates the process, 2) the role played by goals, 3) the relationship between means and ends, 4) how comprehensive the analysis is, and 5) how integrative are the strategic decisions. Fredrickson (1984) and Fredrickson and Mitchell (1984) then tested the hypothesized

relationship between the comprehensiveness of strategic decision processes and firm performance in two different industries by developing a strategy scenario describing a strategic issue for each industry. They asked Likert type questions of executives about the decision process that would be used by their own firm to address the issue. The relationship between comprehensiveness and firm performance was found to be negative in the unstable environment and positive in the stable environment.

Eisenhardt and Zbaracki (1992) reviewed the strategic decision making literature focusing on dominant paradigms - rationality and bounded rationality, politics and power, and garbage can. They concluded that organizations are accurately portrayed as political systems in which strategic decision makers have partially conflicting objectives and limited cognitive capability. Furthermore, strategic decision making is best described by an interweaving of both boundedly rational and political processes - it is boundedly rational in that strategic decision makers are cognitively limited and engage in a cycling among rational decision making steps and it is political in that strategic decision makers also engage in politics and that ultimately the most powerful among them determine decisions. On the other hand, they found the garbage can model to be an intriguing attempt to explain the less rational aspects of decision making, but found it to be unsupported by the evidence.

Dean and Sharfman (1993a, 1993b, 1996, 1997a) conducted a longitudinal study of twenty-five manufacturing firms in sixteen industries, studying sixty-one strategic decisions. Using a total of three hundred structured interviews with 113 senior managers, they studied the effect of four different levels of context (environment, organization characteristics, strategic decision making group, and the content of the decision) on strategic decision making processes and decision effectiveness using procedural rationality, political behavior, and flexible methods of decision making. The

results varied across the three different types of processes. They found that firms were more likely to use procedural rationality when they operated in environments that were low in competitive threat, organizationally faced relatively little external constraints on their actions and when the problems they faced were not characterized by uncertainty. In addition, they found no significant relationship between decision importance and rationality, nor was procedural rationality any more likely to be used when the strategic decision was characterized by contention (Dean & Sharfman, 1993b).

When the strategic decision did involve conflicting interests among the decision group, political behavior was more likely, unless the decision was of vital importance. Political behavior here refers to acts of influence intended to enhance or protect individual or group interests. Dean and Sharfman concluded that when the decision was important to the group members, political behavior increased but when the decision was important to the firm, political behavior decreased. The strongest relationship was found to be the negative relationship between political behavior and trust among the group members. Apparently, trust limits the need for and the appropriateness of political behavior (Dean & Sharfman, 1993a).

The third decision process type Sharfman and Dean studied was the flexible decision process, focusing on an openness dimension and a recursive dimension of flexibility. Openness is the willingness on the part of decision groups to consider new ideas, information sources and roles. Recursiveness is the tendency to cycle back and reconsider an early step of the decision process. This flexibility dimension recognizes that strategic decision processes are frequently found to be non-sequential in nature. They found several interesting relationships. In more competitive environments, decision makers were less likely to be open to new ideas. But in situations when there was decision uncertainty or organizational slack there was a greater likelihood of using

flexible methods. Of particular interest to this study, it was found that functionally diverse management teams were no more likely to be flexible in their strategic decision making (Sharfman & Dean, 1997a).

Dean and Sharfman concluded their study by evaluating the effectiveness of the three different types of strategic decision-making processes. They defined strategic decision effectiveness as "the extent to which a decision achieves the objectives established by management at the time it is made" (1996: 372). This is a departure from the traditional effectiveness dependent variable in strategic management research, that of firm performance. Dean and Sharfman argued that since many other factors affect firm performance, it is important to establish a more direct relationship between strategic decision-making processes and decision effectiveness. They found that procedural rationality was positively related to decision effectiveness, political behavior was negatively related to decision effectiveness, and the use of flexible methods was not related to decision effectiveness (Dean & Sharfman, 1996; Sharfman & Dean, 1997a).

Rajagopalan, Rasheed, and Datta (1993) developed a strategic decision *process* framework that attempts to integrate the strategic decision literature by including organizational, environmental, and decision-specific antecedents of decision process characteristics as well as the process outcomes and economic outcomes. They identified four major streams of research and indicated the amount of research conducted in each stream, whether the results of each stream have been consistent or mixed, and the type and extent of additional research needed. The first stream focuses on the relationship between environmental factors and decision process characteristics, as well as the moderating effect of environmental factors on the relationship between decision process characteristics and process and economic outcomes. The second stream focuses on the relationship between organizational factors and decision process

characteristics, as well as the moderating effect of organizational factors on the relationship between decision process characteristics and performance outcomes. The third stream examines the relationship between decision specific factors and decision process characteristics. The fourth stream examines the relationship between decision process characteristics and process outcomes and economic outcomes. Their conclusion was that in spite of many interesting studies of strategic decision making, many of the streams were incomplete and few consistent conclusions could be drawn. In several areas where there were multiple studies using the same variables, the combined results were inconclusive or contradictory. Much strategic decision process theory development still needs to be accomplished.

The ill-structured and complex nature of strategic decisions has rendered the study of the strategic decision process far less consistent and conclusive than desired. The purpose of this study is to focus on the *group* decision process in the context of strategic-level decisions and to examine key group decision process characteristics and their relationship with decision process outcomes. These decision process relationships fit within the fourth research stream identified by Rajagopalan, Rasheed, and Datta (1993). The decision process characteristics of collaboration and expressed conflict have not been jointly examined previously in this stream to determine their effect on decision commitment. Given the current state of modest generalization available concerning the strategic decision process, it is expected that this study will contribute by providing empirical evidence in support of a key relationship between constructs relevant to a broad range of strategic decision process contexts.

Consensus

The strategic decision literature assumes that strategic decisions are, as a result of their defined significance to the long-term success of the organization, the domain of the top management team (TMT) or dominant coalition, with the CEO playing a central role, if not the dominant role. The focus of this study is the group decision process within a strategic context, even though there are various means of achieving a decision that would then be considered a decision from the group. Johnson and Johnson (1997) identified seven possibilities. From most narrow, they are 1) decision by authority without group discussion, 2) decision by expert member, 3) decision by averaging members' opinions, 4) decision by authority after group discussion, 5) decision by minority (sub-committee or railroading), 6) decision by majority vote, and 7) decision by consensus. Johnson and Johnson recognized that perfect consensus, where all group members agree on the best solution, is not likely to occur often. Instead, varying degrees or levels of consensus are possible. They described consensus as a process with particular characteristics and the related outcome. The consensus process allows each member to be heard, not in a token manner, but as a means of potentially influencing the group decision. Second, as the discussion progresses, each member clarifies their own position and gains an understanding of others' perspectives. This leads to a clearer understanding of the final alternative chosen and its underlying assumptions and rationale. Finally, all group members, and especially those whose first preference in alternatives was not chosen, support the chosen alternative and agree to work for its effective implementation. Johnson and Johnson concluded that consensus is difficult and time consuming and requires group members to avoid tendencies to argue blindly, settle for shortcuts, and assume someone must win and someone must lose.

Some use the term consensus to refer to any group decision where agreement has been achieved by at least a majority vote (Ellis & Fisher, 1994). The stream of research on top management team consensus and strategic decisions uses a less demanding definition of consensus. The foundational study was performed by Bourgeois (1980) in which he defined consensus as agreement among TMT members on their organization's goals and means. It is worth noting that he asked them to indicate the degree of importance their organization attached to each item on a provided list of common organizational objectives and competitive methods. This was a measure of what each TMT member perceived or understood their organization's goals and means to be, not what they thought the goals and means should be. This simple definition and operationalization has been used for many of the studies of the relationship between consensus and firm performance. However, there have been calls for a more complete definition of consensus, distinguishing between the process leading to agreement and the results of the process. Others have argued that consensus is comprised of 1) an appropriate understanding of the solution chosen by the group and 2) a commitment to its implementation.

Bourgeois (1980) studied consensus on strategic goals and means among sixty-seven top-level managers from twelve firms in eleven different industries. In this study it was assumed that the domain was already defined for each firm and that the focus of the consensus was domain navigation decisions. The managers identified the relative importance among twelve organizational goals and the relative importance of twenty-three methods of competing as a part of the firm's overall strategy. It was hypothesized that agreement on both goals and means would have the strongest effect on firm performance. The results were quite different from the expected relationship. The

highest performing firms exhibited consensus on means but not goals and the lowest performing firms exhibited consensus on goals but not means.

Dess (1987) conducted a similar study to Bourgeois' using the same measures of relative importance of goals and means but using a single fragmented industry represented by nineteen firms. Dess hypothesized that consensus on both goals and means were needed for firm performance in this type of highly competitive environment. The results indicated that consensus on either goals or means were positively related to performance. Dess concluded that much work still needed to be done on discovering the nature of consensus and its impact on firm performance. Specifically, Dess recommended that we explore the process that leads to consensus and how it impacts performance. In addition, he indicated that the context might have a significant affect on any generalizations. For example, he suggested that in times of relative prosperity, a greater tolerance for diversity of perspectives might be expected.

Dess and Origer (1987) attempted to develop a theoretical argument that will clear away the lack of consistency in the findings of research on consensus to that date. They argued that the lack of clear consistency in findings is due to differences in consensus definitions (cohesiveness vs. agreement), operationalizations, and type of research. They indicated that it is important to distinguish between consensus as the outcome of the decision-making process and consensus as the process leading up to and building consensus. As a process, it is important to distinguish consensus as a discrete and problem-centered set of techniques, such as dialectical inquiry used in Bourgeois and Brodwin's (1984) Collaborative Model of strategic implementation, from consensus built into the organizational system by the use of subtle methods of manipulating symbols, clans, style and super-ordinate goals, as in the Cultural Model of Bourgeois and Brodwin. In conclusion they argued that theoretical models of the

relationship between consensus and firm performance should include such environmental characteristics as munificence, complexity and dynamism and such organizational factors as integrating structure, as well as delineate between the process and the outcome of consensus.

Wooldridge and Floyd (1989) expanded the discussion of the consensus construct by adding two other dimensions to the previously used degree or level of consensus. The first dimension is scope, which refers to the organizational members who participate in the decision consensus. Wooldridge and Floyd (1990) extended the scope beyond the typical TMT focus by exploring the relationship between consensus among middle-level managers and organizational performance. The second additional dimension of consensus that Wooldridge and Floyd identified was content. They argued that the content of consensus should be expanded beyond the organizational goals and means used in previous studies. They extended the content to include matters earlier in the decision process, such as perceptions of the environment. They also argued that consensus should include commitment to the decision and not just shared understanding, as the previous studies had examined. They concluded by stating that consensus that comes too early in the decision process can have very different effects than consensus that follows a process of deliberation over the advantages and disadvantages of various alternatives and an opportunity for the group to gain an understanding of each other's perspectives.

West and Schwenk (1996) tested the hypothesized relationship between strategic consensus (means and ends) and firm performance as moderated by industry dynamism. Using the same measures developed by Bourgeois (1980) and used by Dess (1987), they tested 39 firms in a stable industry and 26 firms in a dynamic industry. The "resoundingly consistent results" failed to support the hypothesized relationships.

They concluded that the true relationship between consensus and firm performance is unknown, given the conflicting results of previous studies and the resounding non-findings of this study. But, more importantly to this study, they questioned the appropriateness of the consensus definitions and measures used predominantly in this stream of research.

The decision process outcome used in this study will be decision commitment, defined as the group member's commitment to the successful implementation of the final solution chosen by the group. The relationship to be studied will examine consensus process characteristics that lead to the consensus outcome of commitment (Dess & Origer, 1987; Wooldridge & Floyd, 1990).

Conflict

Achieving consensus in the group decision process is challenging in the context of strategic-level issues. The ill-structured nature of strategic decisions draws out the natural conflict of perspectives and preferences among the decision group members. With the stakes high and the potential for emotionally charged distractions and tactics, the manner in which decision conflict is managed is central to strategic effectiveness. The research and theoretical development of the concepts and relationships characterized by organizational conflict have a rich sociological history. The social relevance of conflict studies obviously predate modern organizational issues. Current research of conflict in organizations is built on the studies of Guetzkow and Gyr (1954), Coser (1956), Pondy (1967) and Deutsch (1969).

Guetzkow and Gyr (1954) studied the conditions that lead to consensus as the result of a group decision process and those conditions that lead to disagreement. They studied groups of five to twenty individuals from different departments in business and

governmental organizations who were charged with making policy decisions. About 700 participants were observed in actual meetings and completed questionnaires following the meetings. The data, therefore, were gathered through multiple means, interviews, observations, and questionnaires. The chairperson of each meeting was interviewed prior to the meeting to gather general information about the meeting and the participants. Several days after the meeting and after the questionnaires were completed, each participant was interviewed. During the interview each participant was asked questions about the meeting and background issues.

Guetzkow and Gyr operationalized consensus as the lack of variation in individuals' final position on the issue at hand from the final choice of the group. They clearly recognized that this allows for agreement on the final decision for different reasons and still be identified as consensus. They tracked "overt conflict" as significant differences of opinion of any type, intellectual or personal, among meeting participants observed during the meeting. Based on a distinction between conflict associated with the group task and conflict of a personal nature tied to interpersonal relationships, they developed a measure for substantive conflict and a measure for affective conflict.

The index of substantive conflict was based on the number of opposing comments in the meeting compared to the total number of supporting and opposing comments. The index of affective conflict was a rating based on the observers' evaluation of the extent of frustration during the meeting among group members. Therefore, the categorization of groups into substantive and affective conflict was based on observers' perceptions. The degree of consensus, as an outcome of the group process, was based on self-reporting by the participants.

The overall generalization of the results of this pioneering study was that groups in substantive and affective conflict can both reach consensus but by different means.

When a group experiencing substantive conflict reached consensus it was a result of emphasizing factors, which positively promote consensus. On the other hand, a group experiencing affective conflict achieved consensus by decreasing forces that hinder the achievement of consensus. The factors that positively promote consensus included an emphasis on the factual knowledge and expertise of the participants and group leadership that actively pursued the use of the factual information available to the group. The leaders also offered multiple tentative solutions for the groups consideration, even as the group remained focused on resolving the issue at hand. In addition to these process characteristics, the interpersonal relationships among the group exhibited mutual respect, care, and support which encouraged a free exchange of ideas and opinions. In contrast, the methods used by groups in affective conflict to reach consensus included postponing difficult decisions on complex issues and focusing on unrelated and simpler agenda items. In addition, the participants withdrew from the discussion and narrowed their interaction with other members of the group. Guetzkow and Gyr also expressed surprise at the absence of any significant relationship between consensus and three other factors, the use of formal group procedures, the urgency of the problem, and the importance of the issue to the overall welfare of the organization.

Coser (1956) explained that conflict is a normal part of the socialization process. He further stated that it is an essential element in group formation and the persistence of group life. Individuals and subgroups will develop rival claims to limited resources, as well as positions of power and prestige. Conflict contributes to the establishment and maintenance of group boundaries and group identity. His arguments were based on an assumption that individuals will very naturally have disagreements, which will result in hostile feelings and attitudes. Relationships must have opportunities and means to express such differences and hostilities in order for the relationships to remain viable.

The dynamic process of conflict establishes a set of norms and rules of engagement in new relationships or revitalizes existing norms in ongoing relationships.

Conflict is inherently intertwined with power. Coser argued that conflict, rather than being disruptive or destructive, is actually a means of continuously identifying and modifying the relative power within relationships as well as maintaining a balance of power within the group. Of particular interest to this study is Coser's discussion of the tendencies of close-knit groups in handling internal conflict. Such groups tend to suppress conflict, fearing a loss of or damage to the highly valued intimate relationships. This is a significant matter because close-knit groups are not just characterized by a high level of personal involvement, but frequent interaction as well. With frequency of interaction and avoidance of manifest conflict, frustration and hostile feelings accumulate over time. When (and if) the suppression pattern is interrupted, the expression of the hostile feeling can be particularly intense. Frequently those involved will not only express their feelings over the current issue, but unload the accumulated frustration and hostility. The relationship is likely to be severely damaged and may even be destroyed as a result.

On the other hand, a group that encourages the expression of differences on current issues and avoids the accumulation of hostile feelings should find conflict to be far less disruptive. Coser concluded that conflict is more likely to become dysfunctional when the group or organization has too little tolerance of the conflict or does not institutionalize conflict. Conflict does not threaten the group or organizational performance or survival, but rigidity, which suppresses natural conflict, can.

Coser did distinguish between conflict that has a personal and subjective goal and conflict that has an impersonal and objective goal. Although this was not the fundamental concept in his research, he did develop several characteristics of

relationships in which the parties are able to objectify the conflict. For example, he argued that not only will the norms and rules of engagement exclude personal attacks, but that the struggle and its expressions will be more intense, since the contending parties are fighting for the "worthy cause" and not for selfish gain. Finally, Coser argued that conflict, when allowed to be legitimized, provides the flexibility to adjust expectations, actions, and norms as external and internal conditions change. The rigidity resulting from suppressed conflict, on the other hand, increases the likelihood of large-scale failure.

Pondy (1967) developed a model of conflict as a dynamic process, drawing on the multiple uses of conflict as a term to describe 1) conditions leading to a particular behavior, 2) perceptions of problematic differences between individuals or groups, 3) attitudes and feelings between contending parties, and 4) behavior that attempts to advance the individual's or group's goals while impeding other individuals or groups from reaching their goals. Pondy defined this dynamic process as a conflict episode with five distinct stages (latent, perceived, felt, manifest, and aftermath) that compare to the different uses of the conflict term. A series of interrelated conflict episodes characterize a conflict relationship. He used the analogy of the steps of the decision-making process, which lead to a commitment to a course of action to argue that a conflict episode is a process that leads to a certain conflictual action. He referred to this process as a gradual escalation to a state of disorder, and compared the choice made in a decision process to the conflict episode reaching open aggression. This seems to imply that the conflict episode leads naturally to a non-productive end.

Pondy characterized the discussion of conflict at the time of his writing as fashionable in labeling conflict as neutral since it could be functional or dysfunctional. He referred to this generalization as a palliative, implying that the underlying problems

may not be dealt with. Pondy argued that to decide whether conflict is functional or dysfunctional there must be a set of values against which the results of conflict can be evaluated. He offered a generic set of organizational values for such an evaluation. In order for conflict to be functional it must further the organization's productivity (in terms of quantity, quality, or innovation), preserve the organization's stability, or enhance its adaptability. Since conflict is a complex matter, and these values of productivity, stability, and adaptability are not entirely parallel in nature, organizational conflict may at times be functional and at other times it may be dysfunctional. It also may have functional and dysfunctional aspects simultaneously. As a result of this complex set of outcomes, Pondy argued that, in general, conflict will not be highly valued in most organizations. Even a tolerance of divergence was not, at the time, a widely held organizational value in Pondy's assessment.

Latent conflict, as Pondy described it, is conflict at its source. He identified three major types of conflict sources. First, competition for scarce resources becomes the basis for conflict whenever the total of all requests exceeds the available resources. This struggle can occur at any level of the organization and at any time frequency. The second source of conflict is labeled by Pondy as drives for autonomy. Conflict among vertical relationships results from the superior's perceived need to control the behavior of subordinates and the subordinate's perceived need for autonomy. Contributing to this difference is the lack of fit between the goals of individuals at the various levels and the goals of the organization.

The third source of organizational conflict is the divergence of subunit goals. Whenever distinct units of an organization, in an ongoing relationship or a special project, need to cooperate and coordinate their actions, there is the potential for conflict. Such interdependence leads to conflict as each party attempts to achieve a different set

of goals or even if their goals are compatible but they do not agree on the means of achieving those goals. Such lack of consensus occurs whether or not their subunit goals are compatible with the organizational goals.

The second stage of a conflict episode is perceived conflict. Pondy argued that an organization is faced with more latent conflict than it can process. Therefore, some of it is, intentionally or unintentionally, ignored or overlooked and other latent conflict is acknowledged. Pondy stated that it is the organizational members' value system that is the deciding factor in what conflict will reach this second stage of perceived conflict. The third stage is felt conflict. Pondy stated that this stage of personal involvement is characterized by individuals experiencing anxiety and tension over the conflict. Much of the anxiety is focused on what other parties to the conflict will do and what will be the impact of those actions. These anxieties generate personal feelings directed toward the other parties.

The fourth stage in the conflict episode is manifest conflict. Pondy's definition of manifest conflict is quite specific. If a party knowingly attempts to block the goal achievement of another party to the conflict, then the conflict has reached the manifest stage. Whether the individual took such action deliberately to block the other's goal achievement or whether the action was taken in spite of the impact, if the actor was aware of the other's goals being impeded then it is manifest conflict. Administrative devices have traditionally been employed to avoid and resolve conflict before it reaches the conflictful behavior level. Pondy argued that conflict is likely to reach this state regardless of the administrative devices if relationships are not valued highly enough or if the conflict is inherently strategic as the subunits pursue their goals. Also, if conflict reaches this stage then conflict in other conflict episodes that has not reached this stage may be brought into the current episode as a part of the escalation process.

The final stage is the conflict aftermath, which is the impact that this episode has on the conflict episodes that follow. Each episode can either set the stage for more acrimonious episodes or for more cooperative episodes. Pondy also emphasized the important role that changes in the environmental context play in moderating or magnifying the effect of historical episodes on those to come.

Deutsch (1969) provided an activities-oriented definition of conflict. He stated that conflict exists whenever incompatible activities occur. By incompatible he meant actions that interfere or impede or in some way make someone else's actions less effective. But he also stated that it is important to distinguish between manifest conflict and the underlying conflict. These two statements seem to imply that the incompatible actions are an indication or representation of the conflict but that the actual conflict (underlying) is internal with a cognitive or affective nature. In all six dimensions discussed (number of issues, number of motives, perceived principles at stake, willingness to bear conflict costs, adjustment to norms, and attitude intensity) cognitive or affective terms are used to describe the dimension. Deutsch did not take a deterministic approach, but rather argued that whether the overall results of conflict are beneficial or harmful to the organization is dependent on the choices made by participants, even in the most difficult circumstances. Conflict is not inherently destructive or unhealthy.

The context for such choice, according to Deutsch, is either competitive or cooperative in nature. In a competitive context the participants operate in a mindset that assumes that in order for them to achieve their own goals, it will mean other participants will be kept form achieving their goals. Deutsch identified a number of effects of the competitive assumption. First, communication between contending parties is limited, distorted and unreliable. Second, an attitude of suspicion develops which is intensified

as a result of the distorted communication. This suspicion magnifies perceived differences between the parties and minimizes the perceived areas of commonality. But this perception of differences is not a neutrally oriented process. Instead it is a biased set of perceptions that lead to the belief on each side that their own preferred solutions are superior and are motivated by purer intentions. As each side becomes more convinced of their superior preferences the conflict escalates. Commitment to a consistent course of action is justified regardless of the specific consequences of any single action. This frequently leads to the conclusion that the only viable solution to this competitive struggle is one imposed by one party on the other in an exercise of power.

Deutsch concluded that conflict based on the competitive assumption results in a limited set of intellectual resources that each party can draw upon to resolve the conflict. The impact on the intellectual resources is illustrated by a reduction in the number of alternatives perceived to be viable and an evaluation of alternatives that is characterized by stereotypical responses, employing a short-term focus and polarized thinking.

Conflict that is based on a cooperative assumption is strikingly different as Deutsch described it. Conflict is not inherently detrimental to goal attainment. On the contrary, conflict has the potential to have a very beneficial effect on the individual participant, the group and the organization. Deutsch argued that conflict can decrease the likelihood of stagnation, generate a steady flow of new ideas, and lead to improved problem solving. The cooperative context, which Deutsch believed is necessary in order for constructive conflict to thrive, is composed of individuals who exhibit a dissatisfaction with the status quo, a confidence in their own abilities, a willingness to question assumptions, and an interest in entertaining novel ideas and evaluating ideas from different perspectives. Deutsch stated that social conditions are important. He identified the need for an environment that encourages the open expression of innovative ideas,

provides the opportunity for conversations with a variety of people focused on new ideas, and fosters an optimism that difficult problems and challenges can be creatively tackled and resolved with an appropriate level of energy and effort.

Deutsch identified three reasons why a cooperative context for conflict results in a beneficial resolution. First, given the personal characteristics and social conditions, the cooperative process takes place within an open conversation without the need for distortion or deception. Such clear communication enables the participants to gain the most from the exchange of ideas and to fully employ the intellectual resources. Second, the cooperative approach encourages each participant to respect the values, interests, and perspective of other participants and to expect to find a creative solution that is beneficial to all. Third, the cooperative approach promotes a relationship built on trust and respect for each participant, for who they are and what they bring to the process.

Deutsch argued that the success of the cooperative conflict approach is dependent on the strength of cooperative bonds between the participants. He offered four such bonds as examples: superordinate goals, mutually facilitating interests, common allegiances and values, and linkages to a common community. He went further to identify membership in a common community as the most critical influence on cooperative conflict. If the bonds are strong enough the process can withstand failure and other unforeseen events. Deutsch, in conclusion, argued that cooperative and competitive processes tend to perpetuate themselves. The personal and process characteristics draw participants to similar behavior over time. If there is any shift or break in the pattern it is away from cooperative and toward competitive. The natural conclusion is that those involved in a cooperative process have to be particularly aware of any such shift and to respond accordingly to reverse the movement.

The early studies of Guetzkow and Gyr (1954), Coser (1956), Pondy (1967) and Deutsch (1969) provide a strong conceptual foundation for the strategic decision process constructs and relationships to be examined in this study. The work of Tjosvold, Amason, Eisenhardt and others build further application to the organizational context on this rich sociological foundation.

Tjosvold (1985) started with an assumption that organizational members will inevitably have opposing views in the decision-making and problem solving process. Such conflict of ideas is magnified by organizational position whether functional or hierarchical. He further assumed that the level and amount of conflicting ideas will increase in the future.

Tjosvold identified controversy as a particular type of conflict, which occurs when "one person's ideas, opinions, conclusions, theories, and information are incompatible with another's when they discuss problems and make decisions" (1985: 22). He distinguished controversy from conflict of interests, which occurs when "the actions of one person pursuing his or her own benefits interfere, prevent, or block the actions of another pursuing his or her own interests" (1985: 22). Conflict of interests is based on differences in needs, preferences, goals, and on scarcity of resources. This distinction is considered important because a group could have a common set of objectives and yet disagree on how to accomplish those goals. The distinction is also important in terms of the manner in which the conflict is managed. Conflict of interest, according to Tjosvold, is typically resolved through bargaining, negotiation, and compromise. On the other hand, controversy has the potential of a significantly different approach to its resolution. Through the elaboration of positions and supporting arguments, intent of understanding each other's reasoning, and the integration of opposing views, controversy can be managed constructively and result in the creation of high-quality decisions. Tjosvold

advised that this distinction between controversy and conflict of interests as two major types of conflict be considered as a conceptual identification of pure types. He further stated that most conflicts are in fact a combination of the two to varying degrees.

Tjosvold developed a model that distinguishes between productive and unproductive controversy. As members of a decision-making group present their views to the group, they experience internal conflict and uncertainty as the other members respond from their perspectives and evaluate the ideas. In a productive setting, group members respond to the group's challenge of their ideas by exploring the other views and rationales expressed by the group. As they recognize the shortcomings of their own ideas, they tend to integrate some of the ideas of others into their own. As a result of this mutual examination, understanding of perspectives and integration, the group decision has the potential of being of much higher quality. In addition, the group is more likely to be committed to its implementation.

In an unproductive setting, group members respond in a closed-minded approach in which they listen to others' ideas only to identify weaknesses and argue their ideas' superiority. This leads to a polarization of positions and the winning decision draws only on the merits of one position rather than the merits of an integrated solution. The resulting decision will tend to have the support and commitment of only the winning members.

Further, Tjosvold identified antecedent conditions that lead group members to openly question their own position and to appreciate the opposing position of other group members. The first is cooperative goal interdependence in which the group members recognize a common responsibility for the decision and seek a solution that is beneficial to each group member. The second is a mutual confirmation of competence among the group members. A sense of confidence and acceptance by the group

prompts members to take an interest in other group members' ideas. The third condition is an orientation of influencing others while being receptive to their persuasion. Such a collaborative influence replaces an orientation of control over others in the group.

The third approach to controversy identified in Tjosvold's model is avoidance. Three reasons for the common use of this approach are drawn from the research program. First, interpersonal conditions are commonly characterized by competition to advance one's own position or the position of those they represent, the need to confirm one's own value to the group or organization, and the need to control events and behavior of others to the benefit of their own position. Second, there is a prevalent belief that conflict is an undesirable state and should be avoided, or at least resolved quickly, because of the negative effects. This lack of understanding of the positive and productive potential of controversy contributes to the socially unacceptable status of virtually any type of conflict. Third, whether the members of the organization or the decision-making group appreciate the potential benefit of controversy or not, they frequently do not have the skills or training needed to constructively manage the controversy process.

Amason and associates (Amason, 1996; Amason & Sapienza, 1997; Amason & Schweiger, 1997) conducted studies of top management teams and their strategic decision-making processes. In an attempt to reconcile inconsistencies in previous research findings concerning the benefits of intragroup conflict, they distinguished between cognitive and affective conflict. Cognitive conflict is focused on substantive, issue-related differences resulting from the group members' natural differences in perspectives that they bring to the process. Cognitive conflict surfaces as they consider their differences on the issue at hand. Cognitive conflict calls attention to underlying assumptions and strengths and weaknesses of alternatives under consideration. It also

promotes the generation of creative solutions to meet the needs of conflicting interests. Affective conflict, on the other hand, is characterized by emotional disagreements over personalized matters. Affective conflict arises as discussions of differences are viewed as personal attacks, which lead to distrust, suspicion, animosity and resentment.

Amason theorized that cognitive conflict would lead to higher decision quality and affective conflict would lead to lower decision quality. In addition, he argued that cognitive conflict would produce higher levels of understanding, commitment, and affective acceptance (strong positive sentiments toward group members and the group as a whole) in the decision process and affective conflict would produce lower levels of each decision characteristic. Amason separates consensus into components of understanding and commitment, recognizing that definitional confusion has negatively affected the results of previous studies of consensus. For consensus to have value to the decision making and implementation process, it must comprise more than verbal assent. A common understanding among the group members allows their independent actions to be consistent with the intentions of the group decision. Commitment to the group decision increases the likelihood that the group decision will be implemented as intended. The findings of the studies were supportive of the positive relationship between cognitive conflict and decision quality, understanding, and affective acceptance, but not supportive of the relationship with commitment. The findings were also supportive of the negative relationship between affective conflict and decision quality and affective acceptance, but not supportive of the negative relationship with understanding or with commitment.

Amason and Sapienza (1997) also theorized about antecedents to cognitive and affective conflict. They hypothesized that larger top management teams and greater openness (an atmosphere in which members are free to express their views) would lead

to higher levels of cognitive conflict. Further, greater mutuality (extent to which members share in the consequences of the decision) would lead to lower levels of cognitive conflict, but would also act as a moderator to strengthen the relationship between openness and cognitive conflict. The findings supported the hypotheses that team size and openness were antecedents of cognitive conflict but did not support the hypotheses of mutuality as a direct or moderating variable. They also theorized that larger top management teams would lead to higher levels of affective conflict and that greater openness and mutuality would lead to lower levels of affective conflict. They also expected a moderator effect of mutuality on the relationship between openness and affective conflict. The findings supported the hypotheses that there was a positive relationship between team size and affective conflict and a negative relationship between mutuality and affective conflict. The findings did not support the hypotheses of the direct effect of openness on affective conflict, but in the presence of mutuality as a moderating variable, there was a stronger negative relationship between openness and affective conflict. They concluded that since openness stimulates cognitive conflict but by itself does not restrain affective conflict, and since mutuality discourages affective conflict but by itself does not encourage cognitive conflict, the most effective means of managing conflict in the group decision-making process is to promote both mutuality and openness simultaneously.

Eisenhardt, Kahwajy, and Bourgeois (1997, 1998) studied the top management teams of 12 technology-based firms. Their findings were also focused on a distinction between substantive conflict and interpersonal (affective) conflict. They identified four levers of effective conflict management. First, bringing together heterogeneous groups of people increases the likelihood of diverse perspectives being brought to bear on decision alternatives and therefore to identify strengths and weaknesses of the

alternatives under consideration. Members coming from various educational, functional, geographical, age, and personality backgrounds will frequently generate a wider range of alternatives to analyze and compare. Second, frequent interaction among the group was found to be essential. Such interaction allows members to clarify their own ideas and position as they present them to the group and better understand the ideas and perspectives of other group members, rather than assuming they know where others stand on the relevant issues. As the group becomes more familiar with the other group members and their perspectives, they are more confident in expressing their ideas in a manner that will be well received by the other members of the group.

Third, effective management of conflict often found group members assuming distinct roles in this discussion process. Common roles included an action-oriented role, a caution-oriented moderating influence, a visionary looking into the long-term future, a wise, experienced advisor, and a devil's advocate. These roles help the group to take important tensions into consideration (short-run versus long-run, status quo versus change, structure versus flexibility). The roles also legitimize dissent for the group members in any group discussion. Finally, the use of multiple-lens heuristics encourages the examination of multiple perspectives on the issue at hand. Intentionally increasing the number of alternatives to be considered was found to be effective since it is common for a group to focus on one or two obvious alternatives. This broadens the evaluation of existing alternatives and introduces creative alternatives that might re-conceptualize the problem or issue and offer an integrative approach that would satisfy a large number of needs. Another heuristic found to be beneficial was the use of multiple scenarios. Looking at several possible future states and what might bring them about helps the group to identify assumptions being made that may be unfounded or at least in need of examination. This process is a reminder of the uncertain and ambiguous nature

of strategic-level decisions. Finally, the heuristic of role-playing the part of various stakeholder groups helps the team to consider additional perspectives, and more specifically, the perspectives of groups who are in key relationships with the group and organization.

Eisenhardt et al. (1997) also found that the groups with lower levels of interpersonal (affective) conflict framed the decisions as collaborations in which the group attempted to find the solution that was the best for the collective. This collaborative frame was a result of the group having a common set of goals and vision of the future. This does not mean the group was in agreement concerning how the goals could and should be achieved; only what their overall long-term goals were. Strategic-level groups with such common goals perceived strategic decisions as opportunities to achieve their common goals rather than as responses to threats from the environment. Furthermore, groups adopting a collaborative frame were more likely to understand other group members' positions and learn from them and to search for integrative solutions that would meet a broader set of needs.

Finally, they found that groups effectively managing conflict used consensus with qualification rather than pure consensus or other decision rules. Consensus with qualification is a decision rule that sets an initial goal of consensus as the group discusses and evaluates alternatives. If, within a reasonable time frame, consensus is reached on a particular decision, then the consensus choice stands. If, on the other hand, complete consensus cannot be reached, the individual with the most appropriate expertise or authority makes the final decision. Even though the final decision is left to one individual, that group member draws on the discussion and evaluation of the group and benefits from the collective wisdom gained from the substantive conflict. A variety of problems are avoided by using this decision rule. First, it avoids the problem of the

decision process being extended beyond benefit when the group is struggling to achieve full consensus. One of the reasons given for avoiding conflict in the decision process is the increased time needed to discuss and consider the diverse perspectives represented in the group. This decision rule allows the group to stay within a predetermined time frame for the decision process and still benefit from the deliberation. Groups using a full consensus decision rule may become demoralized when, despite all efforts, consensus is not reached. The intended benefits of a consensus decision may be lost entirely. Finally, consensus with qualification is viewed as being fair. The opportunity to express their own views and to influence the decision is what group members consider a reasonable expectation. Consensus with qualification provides the basis for such procedural justice, which increases the likelihood that the group will accept the decision.

The research of Tjosvold, Amason, and Eisenhardt, Kahwajy, and Bourgeois distinguished between productive and unproductive (or destructive) conflict. The common conclusion was that conflict loses its productive potential when the focus of the conflict shifts from issues to emotionally charged personal attacks. Blake and Mouton (1970) and Thomas (1974) developed models that attempt to identify individual characteristics that influence group members' behavior in group conflict settings.

Blake and Mouton (1970) identified four classical approaches to resolving differences. First, if the difference is subject to an objective experimental process, then such a scientific approach provides the most valid solution to the difference. The second classical approach is to resolve differences through the political process of casting votes, with the majority prevailing. The third approach is to use legal mechanisms when appropriate laws can be drawn upon. The final classical approach is to use an established hierarchical structure within the group or organization to identify the individual with the authority to impose a final solution. Blake and Mouton described a

fifth approach, which focuses on "resolution through insights that permit protagonists themselves to identify and implement solutions to their differences upon the basis of committed agreement" (1970: 416). They labeled this approach the fifth achievement.

To develop this idea, they created a two dimensional conceptual model as a conflict grid. An individual brings two basic considerations to the conflict situation; 1) the degree of emphasis placed on the concern for the other people in the disagreement and 2) the degree of emphasis placed on the concern for getting a resolution to the disagreement. The combination of a high concern for people and a low concern for resolution leads to retracement from positions, smoothing over differences and surface harmony. A high concern for resolution and a low concern for people lead to power struggles and win-lose solutions. A low concern for people and a low concern for resolution result in a desire to avoid conflict, as much as possible. This leads group members to withdraw and insulate themselves from conflict sources and conflict situations. Blake and Mouton also identified a middle-of-the-road approach with moderate concern for people and resolution. Compromise and accommodation offer something to all parties, but often result in solutions where members settle for what they can get.

Blake and Mouton argued that since these are two separate dimensions, and not opposite ends of a single dimension, a high concern for resolution can be combined with a high concern for people, which is the fundamental basis for realizing the fifth achievement. They argued that this combination is possible when the group and the organization value disagreement as a natural outflow of strong convictions and beliefs. It is also dependent on the candid discussion among parties to the disagreement and a commitment to understanding the other parties' perspectives.

Thomas (1976) developed a two-dimensional model of conflict orientation based on the Blake and Mouton model. The two dimensions that Thomas identified are the desire to satisfy one's own concern and the desire to satisfy others' concerns. Even though the former dimension seems quite different from Blake and Mouton's concern for resolution dimension, the resulting five categorizations are very similar. The combination of a high desire to satisfy one's own concern (assertive) and a low desire to satisfy others' concerns (uncooperative) is labeled a competitive orientation characterized by attempts to dominate. A low desire to satisfy one's own concern (unassertive) combined with a high desire to satisfy others' concerns (cooperative) is labeled an accommodative orientation and is characterized by appeasement. An unassertive and uncooperative combination is described as an avoidance orientation and characterized by either intentional withdrawal or isolation or less intentional apathy or indifference. A moderate but incomplete satisfaction for self and others is labeled a sharing orientation and is characterized as willingness to compromise. The final orientation is described as collaborative, since the desire is to fully satisfy both self and others' concerns. This requires an integrative solution.

Thomas argued that it is important to resist the tendency to simplify the model by reducing it to a single dimension such as cooperation versus competition. The focal point of Thomas' theory (as was Blake and Mouton) was the potential of combining a high level of both dimensions, assertiveness and cooperation in Thomas' case. This collaborative orientation is characterized by mutual trust between the parties, open communication based on that trust, and persuasive rather than coercive tactics.

Robbins (1974) distinguished between three philosophies of conflict in management discussion. The first, which he labeled the traditional philosophy, views conflict as destructive in its various forms and needs to be avoided if necessary and

resolved quickly if not avoided. The second philosophy Robbins labeled the behavioral view and characterized it as acceptance of conflict. Those who take this view accept the reality that there are natural differences of perspective and opinion among organizational members as a part of normal activity. They recognize a certain level of benefit from the interaction of individuals with different perspectives, but respond to open expressions of conflict with efforts to resolve the conflict as expediently as possible. Robbins labeled the third philosophy as the interactionist view. Those who take this view of conflict believe it to be a necessity for organizational effectiveness and therefore encourage and even at times intentionally stimulate the occurrence of conflict. It seems that all three views are represented to some extent in the various conflict models that have been reviewed. The common theme within this conflict literature is the recognition and belief in some potential benefit of conflict within the organization when the conflict is viewed as difference in ideas and perspectives. The intent of this study is to further develop an understanding of what strategic decision process characteristics lead to a beneficial use of the group conflict, specifically, increased decision commitment.

Collaboration

Mary Parker Follett preceded most of the modern discussion of the advantages and disadvantages of conflict with a simple proposition that conflict is inherently neither good nor bad. She argued that conflict is simply a difference in opinions, interests, or perspectives and as natural in the relational world as friction is in the physical world. Just as many means of employing friction's characteristics for benefit have been found in the physical world, Follett stated that differences in perspectives and interests can be used for mutual benefit if sought in a creative manner. She identified three ways of dealing with conflict - domination, compromise, and integration. Domination is

accomplished by one party in a position of power being victorious over other parties. Compromise replaces the win-lose results of domination with a solution in which all parties gain something but also concede something. Integration offers the potential of inventing a solution that can increase the gains of all parties and reduce the need for concessions. Two critical steps to the process of integration are the parties 1) openly communicating their respective needs and interests and 2) jointly analyzing those stated needs and interests to identify the core meaning underlying the language and symbols used. This provides the opportunity to collaboratively invent an integrative solution that meets all the core needs identified. Follett concluded by stating that if a solution is achieved by compromise, the fundamental conflict will resurface repeatedly in the future. If an integrative solution is created, future interaction over differences can be conducted on a higher level. She referred to this as progressive integrations.

Mintzberg, Jorgensen, Dougherty, and Westley (1996) pointed out the fact that there is inconsistency in the use of the term collaboration, some with even negative connotations. They drew on Mary Parker Follett's early writing to identify the essence of collaboration as the creative integration of differing parties' needs and perspectives. They attributed value to her contribution of the importance of collaboration. By emphasizing the potential of integration and synthesis she articulated a process that is superior to solidifying positions around predetermined solutions whose mutually exclusive nature lock the parties into either/or results. Mintzberg et al. stated that effective collaboration is primarily a process of communication built on mutual trust that must overcome barriers such as hierarchical structure and formalization.

Gray (1989) described collaboration as a process that brings together individuals with differing perspectives on issues in which they have vested interests that often can lead to adversarial relationships. Collaboration can transform this adversarial interaction

into a mutual search for a richer appreciation of the issue, a common understanding of the parties' respective views, and a collective course of action that will address the highest priority needs of all parties. Gray identified five characteristics of the process that allows collaboration to be effective. First, stakeholders recognize the extent of their interdependence. This interdependence results from the manner in which their concerns and needs are intertwined. The focal point for the collaborative endeavor is a shared vision of something larger than any of the participants can accomplish in their own abilities and resources. Second, parties to the collaboration are willing to reexamine and test assumptions that they bring to the process and to develop a genuine respect for other parties' perspectives as worthy of exploration. This exploration of ideas and viewpoints and the constructive confrontation that follows hold the potential of discovering an integrative solution that satisfies a broader set of interests than previously believed. Third, the collaborative development of an integrative solution is the result of participants being willing to take responsibility for the process and ownership of the resulting solution. Fourth, a collaborative process establishes the basis for a transformed set of relationships between the collaborating parties that will influence and enhance future interactions on related matters or similar issues. Finally, Gray described collaboration as an emergent process rather than a formalized system of cooperation and coordination. The synergistic nature of a collaborative process indicates that the parties cannot envision in advance the integrative solution that will emerge.

Haskins, Liedtka, and Rosenblum studied thirty professionals in three professional service firms and found a "pervasive ethic of collaboration at the core of their success" (1998: 34). As a result of their study, they made a distinction between a transactional collaboration and a relational collaboration. The transactional level of collaboration is characterized by a focus on the task or project assignment and therefore

is episodic. The group is expected to draw on the various skills of the group members to accomplish a stated purpose. Relational collaboration, as they described it, transcends any specific team or project and becomes embedded in the very manner in which the organization operates as a whole. This type of collaboration is based on an explicit set of shared values that are sanctioned by the organization and the relationships among the organizational members that are rooted in and nourished by the shared values. The firm is organized and operated by a collective sense of calling and mission among its members to serve a particular clientele and colleagues in the process. A key result of this calling is the drive to be creative in the service of clients, to learn from each endeavor, and to share the insights with colleagues. This informal (as well as formal) collaboration among organization members is described as "super synergy" and is an explicit goal for the organization and considered to be central to their sustainable competitive advantage. This relational collaboration is perpetuated by a very selective recruiting process as the organization attempts to hire those who are a good fit and will adopt the same sense of calling. These professional service firms exhibiting this relational type of collaboration are an exception to the frequently made assumption that organizations with such a strong central ideology are narrowly focused on tradition and unreceptive to continuous innovation (Mintzberg, 1979).

The Conceptual Model

The consensus – performance stream of research has provided mixed results at best, and according to West and Schwenk (1996), resounding nonfindings. Much of the problems have stemmed from the particular construct definitions and operationalizations employed in the studies. Yet, decision group consensus, appropriately defined and qualified, will continue to be a relevant strategy process construct. Consensus defined

to include decision commitment needs further development and testing to identify its effect on firm performance, and more importantly to this study, to identify the decision process characteristics that lead to increased decision commitment. The research streams that have explored the nature of interpersonal conflict and the purpose and benefits of collaboration have provided some insight on the decision process antecedents to commitment. The conflict and collaboration streams have indirectly discussed the connection between the two constructs without directly testing for any interrelationship. This study will explicitly examine the interaction of the collaboration construct and the interpersonal conflict construct.

The first construct examined then in this study will be "collaboration" and would represent the degree to which group members participate in the group decision-making process in such a way as to promote the interests of the larger group (organization). A low level of collaboration would be the equivalent of a self-interest approach to the group decision process. The second construct will be "expressed substantive conflict" and will represent the degree to which group members within the decision process express their differing views on the decision at hand and various alternatives under consideration, in spite of disagreement from other group members. The main interest in this study is the interaction of these two constructs since it is anticipated that a collaborative approach to open conflict would increase the likelihood of increased decision commitment. A 2X2 matrix can be constructed to visualize this interaction and is shown in Figure 1.

A **high** level of collaboration with a **low** level of expressed substantive conflict would be expected to result in a form of cooperation where group members choose not to raise their questions or express their doubts in an effort to keep harmony, valuing group unity above other interests.

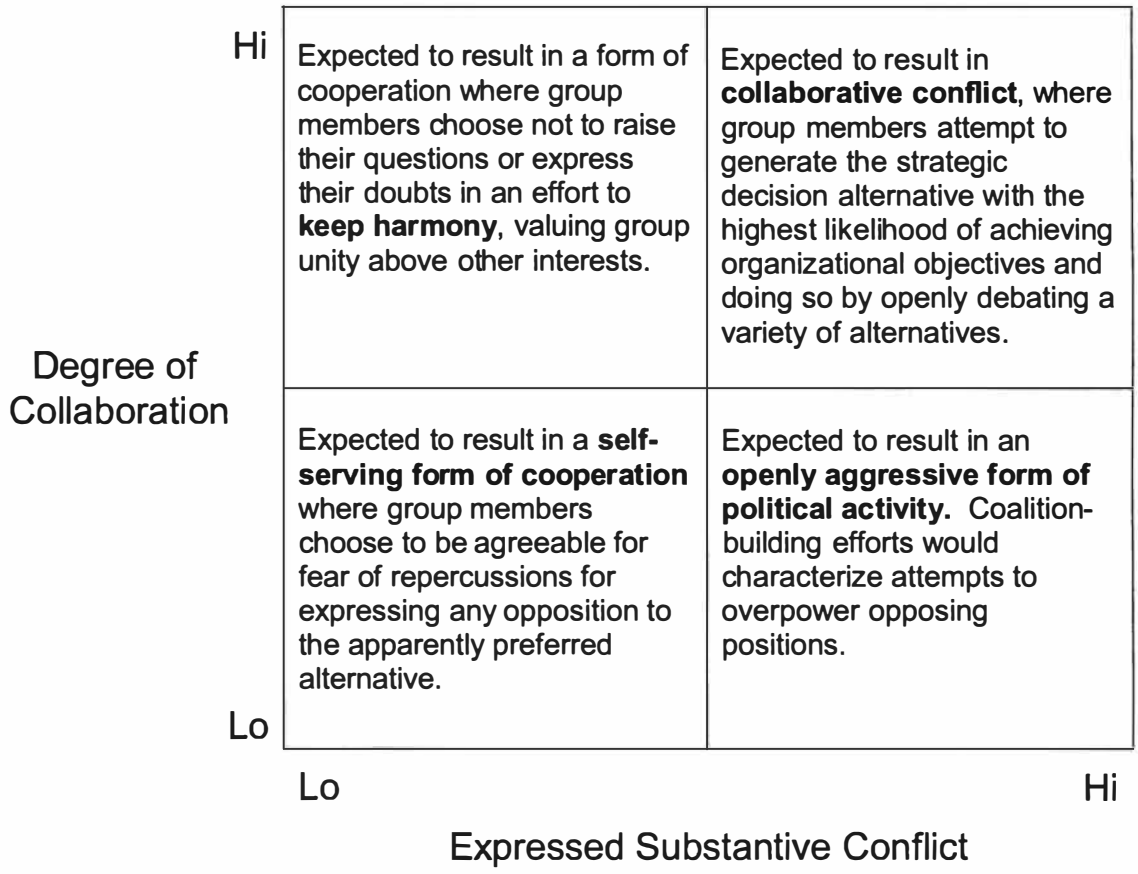

Figure 1. Collaboration and Expressed Substantive Conflict

A **low** level of collaboration with a **low** level of expressed substantive conflict would be expected to result in a self-serving form of cooperation where group members choose to be agreeable for fear of repercussions for expressing any opposition to the apparently preferred alternative. This passively political approach might be taken also in a negotiated exchange of support for a later decision to be addressed.

A **low** level of collaboration with a **high** level of expressed substantive conflict would be expected to result in an openly aggressive form of political activity. Coalition-building efforts would characterize attempts to overpower opposing positions.

A **high** level of collaboration with a **high** level of expressed substantive conflict would be expected to result in attempts to generate the strategic decision alternative with the highest likelihood of achieving organizational objectives (with the least attention to self-serving interests) and doing so by openly debating a variety of alternatives. This collaborative approach to conflict would involve group members advocating one position while being open to the potential strengths of other alternatives.

The area in which the strategic decision process literature, the consensus literature, the conflict literature, and the collaboration literature seem to intersect is the issue of what is required for group members to take ownership of and commit to a group decision when the decision is characteristically complex, uncertain, ambiguous and important. These research streams would indicate that the group members need to have the opportunity to express their viewpoints, openly evaluate others' differing ideas, jointly explore new solutions, work towards a common goal, and accomplish this in an atmosphere of mutual respect. The following propositions express these anticipated relationships:

P1: The degree of collaborative behavior in the strategic decision-making process is positively related to the level of commitment of the group members to decision implementation.

P2: The degree to which substantive conflict is expressed in the strategic decision-making process will moderate the relationship between collaborative behavior and implementation commitment.

Tolerance for Eccentricity

Many have developed approaches to conflict in the decision process that appear to be based on an assumption that members of a group are not likely to keep cognitive conflict free of affective conflict and all the detrimental effects. A related assumption is that individuals will fear the effects of affective conflict and therefore avoid any open expression of substantive conflict. Two general approaches have been developed to address this set of concerns over expressed conflict. First, some advocate the use of techniques that surface and evaluate the conflicting ideas without any ownership of particular ideas being indicated. The two most widely used techniques are the Delphi Technique and the Nominal Group Technique. The Delphi Technique solicits ideas, rationale for the ideas, and evaluative feedback in writing without group members meeting together. The Nominal Group Technique brings the group together but employs a silent reflective group process to identify ideas and their rationale prior to an open discussion of the merits of each idea. Both techniques encourage participation from all group members and provide the group the opportunity to offer ideas and viewpoints without actually taking any ownership of the ideas. The techniques are also viewed as means of keeping the discussion focused on differing ideas and away from personalities.

The other general approach to proactively managing conflict in the group decision-making process is to use structured conflict techniques. The two most widely used techniques are Devil's Advocacy (DA) and Dialectical Inquiry (DI). DA assigns the role of devil's advocate to a subgroup with the responsibility of identifying problems and shortcomings of a proposal developed by another assigned subgroup. In the DI

technique, one subgroup develops and presents a proposal. The other subgroup does not critique that proposal but develops and presents a second proposal based on opposing assumptions. The combined group proceeds to develop a third proposal that synthesizes the two opposing proposals. These two techniques attempt to grant permission to (even encourage) members to identify deficiencies in favored proposals, while eliminating any stigma that would normally be placed on group members who openly oppose others' ideas. The highest priority in all of these approaches is to increase decision quality and commitment among group members to the resulting decision.

A further purpose of this study is to examine whether an effective organization and a decision-making group can encourage (not just tolerate) the open expression of opposing views in the decision process without orchestrating substantive conflict with the use of these types of techniques. Schwenk argued "without tolerance for eccentricity it is unlikely that any technique for encouraging the expression of diverse views will improve decision making in a firm," (1997: 91). It seems to be assumed in the Delphi, Nominal Group, DA and DI literature that without the use of such structured methods, there will be very little expression of opposing views and the resulting benefits will be lost.

Mitroff and Emshoff (1979) argued that open conflict is necessary to uncover underlying assumptions for proposed strategic decision alternatives and that decision group members must vigorously advocate the various positions to identify each proposal's best case. They argued that the effectiveness of managing such conflict will determine whether the conflict results in extreme polarization or in the synthesis of a stronger alternative. This study will also examine whether it is possible for this effective management of open conflict in a strategic decision group to take the form of a natural

expression of open disagreement and synthesis of ideas that is encouraged and supported by the organization. Therefore the final proposition offered is:

P3: The degree of tolerance for eccentricity within the organization will moderate the relationship between collaborative conflict and decision commitment.

Social Judgment Theory

The methodology that has been chosen for this study (and described in the next chapter) has its foundation in social judgment theory. Social judgment theory (SJT) is based on Brunswik's theory of probabilistic functionalism. Brunswik describes the environment as exhibiting ambiguity and uncertainty as a result of being comprised of numerous, interrelated variables with varying levels of dependability and relevance to the individual. Policy-makers are often faced with the need to integrate information about the environmental variables and make judgments about these uncertain states. Hammond and Brehmer (1973) describe the cognitive process that policy-makers must employ as "partly implicit, partly explicit, partly rule-bound, partly creative, and partly analytical, as well as partly intuitive" (1973: 340). They call this mixture of analytical thinking and intuitive thinking quasi-rationality. The analytical aspect is explicit, sequential, and recoverable and the intuitive aspect is implicit, nonsequential, and nonrecoverable.

The focus of this process is the environment's "zone of ambiguity" which is between what is observed and what must be inferred (because it cannot be observed). Brunswik's lens model depicts this graphically as shown in Figure 2. The distal variable (or depth variable) rarely can be known and therefore must be inferred from the proximal variables (or surface variables). These proximal variables are characterized by imperfect reliability and validity and lead to differing judgments by different policy-

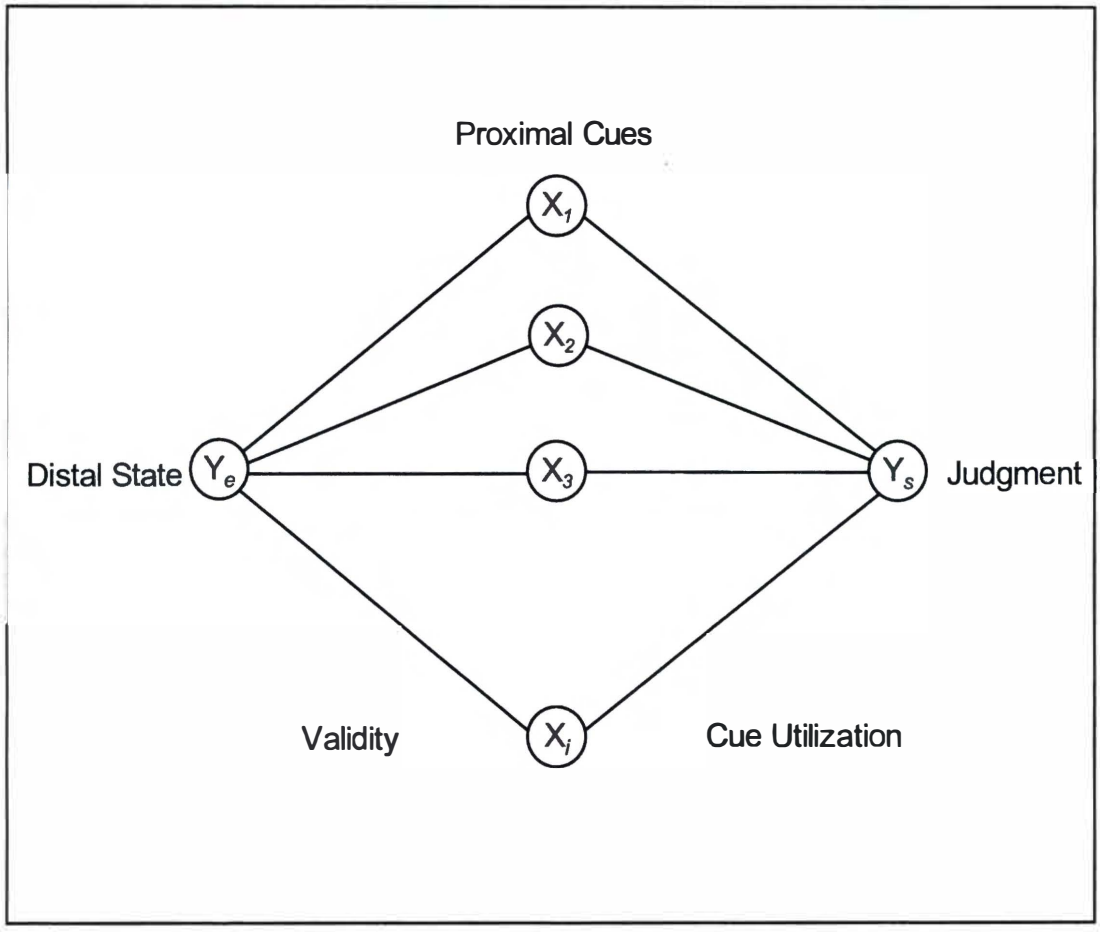

Figure 2. Brunswik's Lens Model

makers. The zone of ambiguity, then, lies between the observable proximal cues and the unobservable distal state (Hammond, Rohrbaugh, Mumpower, & Adelman (1977).

The relationship between the proximal variables and the distal variable is not subject to objective scientific procedures (including isolation and independent manipulation of variables) because of the probabilistic nature of the relationship and the interdependent nature of the proximal variables. Policy-makers, therefore, 1) disagree on the importance of each proximal cue (weights), 2) employ different functional forms (linear or nonlinear) of the relationship between variables, 3) combine the cue information in different manners (organizational principles), and 4) implement their policies with less than perfect consistency (identical judgments for identical circumstances). In summary, different policy-makers arrive at different judgments as a result of drawing different conclusions from the environmental data, developing different policies from the conclusions, and implementing the policy in a different manner (Adelman, Stewart, & Hammond, 1975).

Shanteau and Phelps (1977) distinguish between seven different approaches to the analysis of the judgment process and illustrate each in the context of livestock judgment. They first distinguish between prediction approaches and process approaches. Prediction approaches attempt to determine an optimal decision by breaking the decision into component dimensions a priori, while the process approaches start with the judgments and then attempt to identify the components that lead to the given judgments.

The first prediction approach is a normative use of multiple regression in which a weighted combination of cues is sought that best predicts a predetermined criterion. Once these weights are established they can be used to normatively evaluate (judge) other distal states. The second prediction approach is multiattribute utility (MAU), which

replaces the external criterion with the judge's input of cue values for a particular distal state and the relative weights of the cues. It then applies a predetermined MAU model combination rule. The third prediction approach is Bayesian analysis, which employs subjective probabilities (rather than weights and utilities) provided by the judge and a predetermined Bayesian rule to determine the highest scoring output. Each of these three approaches determines the mode of decomposition prior to the judgment. They work from the proximal cues out to the response.

The process approaches, on the other hand, start with the responses in an effort to decompose the judgment process. The first process approach uses multiple regression to determine the weight for each cue from the responses provided by the judge. The intent is to use only those characteristics or factors that make a significant contribution to the explanation of the judge's response. The second process approach is information integration, which analyzes the cognitive algebra used to integrate subjectively measured information and then uses the algebraic model to solve for the parameters that will decompose the judgment. The third process approach is conjoint measurement, which tests various combination rules using only ordinal properties of the responses. It is primarily useful for checking the internal consistency of rank-ordered judgments. The last process approach that Shanteau and Phelps discuss is quite different from the others since there is no mathematical model involved. The use of heuristics and other simplifying rules to make complex judgments is common and provides an interesting contrast to the other approaches since the heuristics often lead to biases and even errors in judgment.

Shanteau and Phelps conclude their discussion of the process approaches by referring to Hoffman's oft quoted description of such methods as paramorphic representations. The decision model developed in each descriptive method is a limited

and simplified representation of the judge's underlying process as is the case with all research models (Hoffman, 1960; Doherty & Brehmer, 1997).

CHAPTER 3

METHODOLOGY

Hammond (1973) called for new research to address a "very significant problem of the future" – how individuals handle conflict between ideologies, or cognitive conflict. Hammond suggested three key characteristics for such a new research endeavor. First, the research should focus on two or more individuals with different cognitive systems confronting problems with no perfect solutions and for which the subjects' past experience is only partly useful. Second, the researcher should attempt to discover what natural approaches the subjects employ to handle cognitive conflict and the level of their effectiveness. Finally, the research should exhibit both sufficient methodological rigor to be scientifically meaningful and sufficient contextual richness and complexity to be useful. This chapter will discuss the methodology and research setting of this study and describe the manner in which each of Hammond's suggestions were addressed.

Sample Selection

The research population of this study was drawn from the field of higher education. As professional service organizations interacting with various stakeholder groups within their external and internal environments, colleges and universities are faced with a set of strategic issues not unlike profit-oriented business firms. Even though their performance is not evaluated on a basis of rate of return on investors' capital, their operational effectiveness and efficiency is nevertheless subject to evaluation, as well as their stewardship of resources. Within these professional service organizations, faculty members are the highly educated specialists, the professionals

with considerable control over their own work. Mintzberg, in describing the Professional Bureaucracy as a pure type, states that the professionals use their training and expertise and their affiliation with external self-governing professional associations and the standards established within, to work relatively independently of their colleagues, but closely with their clients (Mintzberg, 1979).

In addition to the resulting decentralized structure, the professionals seek collective control over administrative decisions that affect them. Mintzberg further argued that strategy defined as "a single, integrated pattern of decisions common to the entire organization" (1979: 363), is not frequently found in the Professional Bureaucracy. Instead, the strategies of Professional Bureaucracies "represent the cumulative effect over time of the projects, or strategic initiatives, that its members are able to convince it to undertake (1979: 364). Much of the strategic management literature examines the top management team (TMT) as the primary strategic decision makers within the organization. Among the calls for a broader identification of strategic decision makers, the professional service organizations provide a logical choice for study.

Haskins, Liedtka, and Rosenblum (1998) describe a different type of professional service organization from the Professional Bureaucracy pure type of Mintzberg's taxonomy. Instead of an organization of professionals working independently of their colleagues, Haskins et al. describe a professional organization functioning within an ethic of collaboration. They define ethic as "a system of moral principles and values grounded in a sense of calling and stewardship" (1998: 34). Professional service organizations built on this ethic of collaboration exhibit a different type or level of collaboration. This level of collaboration is driven simultaneously by a sense of calling to serve a particular client base, colleagues, and other key stakeholders, a sense of intrinsic value in the work itself, a belief that the organization is held in trust for others,

and a clear linkage between individual and organizational purpose and goals (Haskins, Liedtka, & Rosenblum, 1998).

Among the more than 3600 colleges and universities in the United States, a group of institutions that endeavor to be driven by such a sense of service and calling is the Council for Christian Colleges and Universities (CCCU) members numbering 100. This purpose-driven intent is evidenced by the manner in which these schools recruit students with promotional material, websites, and visitation days in which they provide descriptions of campus life, classroom activity, and mission and purpose statements with this calling as the focal point. Faculty recruitment, selection, and promotion are likewise dependent on the candidate's fit with the calling and mission of the institution. Figure 3 is a sample mission statement from one of the CCCU members.

Mintzberg describe such mission-driven organizations as Missionary organizations. In these organizations the mission is clear and focused allowing members to easily identify with it. The mission is distinctive and inspiring enough to draw new members to it and others who want to be identified with the organization and its mission. Each member is trusted to act in the best interest of the organization and its mission as a result of their careful selection, their loyalty to the organization and its ideology, and their shared beliefs and norms. As differences beyond the shared beliefs and norms arise, members are able to deal with them through mutual adjustment. Mintzberg states that they have every incentive to cooperate with each other since their individual goals are aligned with the goals of the organization (Mintzberg, 1979). Since few organizations approach the consistency of a pure type, the Christian colleges and universities studied here are expected to have more challenges in managing their differences than Mintzberg's statement of ideal.

Taylor University

Mission and Statement of Faith

Mission

Taylor University is an interdenominational evangelical Christian institution educating men and women for lifelong learning and for ministering the redemptive love of Jesus Christ to a world in need. As a Christian community of students, faculty, staff, administration, and trustees committed to the Lordship of Jesus Christ, Taylor University offers post-secondary liberal arts and professional education based upon the conviction that all truth has its source in God.

In order to advance this mission, Taylor University is committed to the following purposes:

- To involve students in learning experiences imbued with a vital Christian interpretation of truth and life that foster their spiritual, intellectual, emotional, physical, vocational, and social development.
- To educate students to recognize that all truth is God's truth and that the Christian faith should permeate all learning, leading to a consistent life of worship, service, stewardship, and world outreach.
- To create specific experiences wherein the integrative focus of the Christian liberal arts education is clarified, personalized, and applied.
- To foster a biblical model of relationships that acknowledges both unity and diversity of the followers of Christ and that can be evidenced in a continuing lifestyle of service to and concern for others.
- To contribute to the advancement of human knowledge and understanding, and serve the evangelical Christian church and the larger public community for the glory of God.
- To build maximum program effectiveness by maintaining appropriate support service, by consistently studying and improving all university operations, and by fostering mutually beneficial relationships between and among students, faculty, staff, administration, and trustees.

Implementation of the Mission and Purposes

Taylor University carries out its mission and purposes through the operation of educational programs centered on two campuses. All Taylor University programs hold to a Christian worldview and are characterized by the integration of faith and learning.

Taylor University Upland serves Christian men and women in a community that consists largely of traditional college students living in a residential campus setting and pursuing baccalaureate-level degree programs.

Taylor University Fort Wayne uses traditional and alternate delivery systems to serve both traditional students and adult learners in educational programming that results in baccalaureate degrees, associate degrees, certificates of completion, and continuing education. In the nontraditional adult programs, enrollment opportunities are extended to qualified individuals who respect, but may not personally embrace, the university's statement of faith.

Statement of Faith

Taylor University is firmly committed to evangelical Christianity. To assure the central place of Christian principles in the philosophy and life of the university, the trustees, administration, and faculty believe that

1. God is the ultimate creator and sustainer of all things in heaven and on earth;
2. The Holy Bible is the inspired, authoritative, written word of God, progressively revealing God's will for humankind who, though created by God in His image, rebelled and needs redemption;
3. Jesus Christ is the Living Word of God, Who made known God's plan for redemption in His virgin birth, sinless life, atoning death, bodily resurrection, and ascension; and Who will return in power and glory;
4. The Holy Spirit is God present in the life of the believer, testifying to the Lordship of Christ and enabling the believer to live a godly life; and
5. The church is the community of believers who express their unity in Christ by their love for Him, for each other, and for all humankind.

Figure 3. Taylor University Mission and Statement of Faith

Of the 100 members of the Council for Christian Colleges and Universities, twenty-five institutions located in the Midwest were chosen as potential sample schools for this study. These schools were chosen because they were within driving distance, which would facilitate the administration of the instrument as well as the distribution and presentation of the results and conclusions. The twenty-five colleges and universities initially chosen are listed in Table 1.

Decision Modeling

Social judgment theory uses multiple regression in a descriptive manner to model the decision making process of the judge. This decision modeling approach is well suited to examine the judgment process of faculty members as they address strategic-level curriculum (and other academic) issues. Further, as faculty members at CCCU institutions wrestle with the variety of perspectives from across departmental and divisional lines (including the liberal arts vs. professional program differences of perspective) and strive to achieve the shared goals and vision of their mission-driven organizations, the complexity and ambiguity assumptions of social judgment theory seem quite appropriate. The assumed natural conflict between judges within social judgment theory and the rich context of academic debate satisfy Hammond's suggested conflict research characteristics.

Decision modeling was chosen for testing the relationships between collaboration, expressed conflict and decision commitment in this study for a variety of reasons. First, decision modeling has been used successfully in previous studies of strategic level decisions. Stahl and Zimmerer conducted a study of the criteria used by 42 corporate executives in selecting acquisition candidates. The executives were presented with 32 hypothetical candidate firms with different combinations of six

Table 1. Potential Sample Colleges and Universities

	School	State	Denomination	UGFTE	Resident	TSE
1	Anderson	IN	Church of God	1872	1217	2251
2	Asbury	KY	Nondenominational	1280	1157	1317
3	Bethel	IN	Missionary	1268	706	1640
4	Bluffton	OH	Mennonite	884	677	1015
5	Calvin	MI	Christian Reformed	4087	2360	4264
6	Campbellsville	KY	Southern Baptist	1309	582	1607
7	Cedarville	OH	Independent Baptist	2645	2218	2762
8	Cornerstone	MI	Baptist	1425	707	2063
9	Goshen	IN	Mennonite	1016	570	1084
10	Grace	IN	Grace Brethren	870	628	1058
11	Greenville	IL	Free Methodist	1033	651	1081
12	Huntington	IN	United Brethren	810	590	904
13	Indiana Wesleyan	IN	Wesleyan	4555	1456	6899
14	Judson IL	IL	American Baptist	916	563	1100
15	Kentucky Christian	KY	Churches of Christ	547	503	563
16	Malone	OH	Evangelical Friends	1818	872	2193
17	Mt Vernon Nazarene	OH	Nazarene	1774	1049	1916
18	North Park	IL	Evangelical Covenant	1349	848	2192
19	Olivet	IL	Nazarene	1631	1227	2498
20	Spring Arbor	MI	Free Methodist	1896	584	2434
21	Taylor	IN	Nondenominational	1857	1443	1891
22	Trinity Christian	IL	Nondenominational	703	402	723
23	Trinity International	IL	Evangelical Free	987	949	2798
24	Wheaton	IL	Nondenominational	2307	2069	2732
25	William Tyndale	MI	Nondenominational	485	52	637

UGFTE – undergraduate full time equivalent
TSE – total student enrollment

acquisition criteria. For each of the candidate firms, the executives were asked to indicate their recommendation as a degree of approval or disapproval (Stahl & Zimmerer, 1984).

The use of repeated decision scenarios and recommendations allows a unique regression equation to be determined for each executive, attempting to capture the decision policy of each individual. In addition, a regression equation can be determined for the entire group of executives or subgroups. The results of this particular study indicated that a linear model adequately represents the acquisition decision process of the executives. The average individual R^2 was .80, but the group R^2 was .39, indicating that acquisition decision policy varies among the firms and even among individual executives (Stahl & Zimmerer, 1984).

Stahl and Christoph examined the divestiture decisions of corporate executives using Capital Asset Pricing Model (CAPM) criteria. Again the individual R^2 was high at .87 and indicated strong support for a consistent decision policy by the individual executives. The results in this case indicated that the executives were not using the CAPM (in its present form) as the basis for their divestiture decisions. An interesting feature of this study was the inclusion of an additional factor in the repeated decision scenario indicating whether the former or current president of the firm had originally acquired the divesture candidate. The results indicated that this factor had a significant impact on the executive's propensity to divest (Stahl, 1989).

Stahl and Wallace studied the process of evaluating research and development candidates within a single industrial firm. The 32 hypothetical project descriptions contained different combinations of six criteria identified from the literature and from the firm's internal documents. Those who returned usable exercises were sent a second set of decision scenarios. Half of the respondents were sent additional information on their

own criteria weights and group average criteria weights, while the other half were asked to make a second set of decisions without receiving any additional information as feedback from the first round. Again a linear additive decision model was found to be an adequate representation of the managers' project selection policy. More importantly, the results of the second round of decisions indicated a significant shift in criteria weights for the feedback group, but not resulting in an increase of consensus among the managers. These studies have provided insight to both the strategic decision policies of individuals and groups and the particular content theory being tested (Stahl, 1989).

Second, decision modeling is a statistically rigorous method because it employs controlled experimental design. Instead of relying on the individual decision makers' own recollection and interpretation of factors considered in making previous strategic decisions, decision modeling asks individuals to make a series of decisions with the factors to be considered controlled within the experiment. Even though the decisions are hypothetical, they are designed to be as realistic as possible and as similar to decisions that the participants are used to making as possible. Decision modeling is not subject to social desirability response bias as are interviews and self-reporting questionnaires and other methods used in strategy research (Stahl, 1986; Stahl & Harrell, 1982). This is of special concern with the sensitive management issues of expressed conflict and collaboration, which are at the heart of this study.

Third, decision modeling has been used in both the laboratory and the field. Studies have been conducted in a variety of field contexts (academic admissions decisions, loan acceptance decisions, investment decisions, auditors reviews, and even congressional votes). Decision models developed for these diverse and complex judgments have exhibited explanatory and predictive value (Slovic, Fischhoff, & Lichtenstein, 1977). Further, Brown (1972) found that decision modeling results of

simulated exercises were not significantly different from results of decision models of actual (and similar) judgments.

The number of decisions presented to each participant depends on the number of decision criteria and the number of levels identified for each criterion. For example, if the decision model contained four decision criteria and three levels of each criteria, the design would be a 3 X 3 X 3 X 3 factorial resulting in a total of 81 decisions scenarios if all combinations were presented. Since this would likely be an unfeasible number of decisions for one individual to consider, a fractional replication would be employed to maintain the benefits of the experimental design and reduce the number of decisions.

The focus of previous decision modeling studies of strategic-level decisions has been on decision content criteria (e.g. corporate acquisition criteria, divestiture criteria, project approval criteria). This study extends the use of decision modeling to decision process criteria. Since the focus is on collaboration among the decision group and expressed substantive conflict, the specific content of the decision is not at issue. A specific decision context will be used for the decision scenario but the conclusions drawn from the results of this experiment should have broader implications because of the focus on process criteria and constructs.

Decision Scenario

The decision scenario developed for this study uses a context familiar to faculty members at liberal arts institutions. The scenario describes a decision process in which the college or university-wide general education requirements are under review and revision. University-wide curriculum decisions, such as general education requirements, affect student recruitment and retention, faculty teaching loads, and the distribution of faculty positions among departments and divisions. Because small changes in the

general education requirements translate into potentially large faculty adjustments for one or more departments, the general education revision process is followed carefully by faculty members across campus and may be characterized by intense debate or political maneuvering. Even though decision modeling is a simulation experience, the faculty participants should have been able to identify with the reality of this issue by referring to prior experience with general education decisions or by considering the potential for such decisions in their present educational environment.

Each participant was asked to simulate being a member of the task force that has been given the responsibility to develop and bring to the faculty a recommendation for the revision of the schools' general education requirements. As members of the task force, the faculty members were representing the interests and perspectives of their departments and divisions, considering the mission and purpose of the university, presenting their own ideas to the group, and evaluating the ideas of the other task force members. Concern for the interests of the department or division was centered on the potential change in the number of courses and credit hours offered within the department and required for general education. Additional concerns were the maintenance of the liberal arts base, unnecessarily limiting the number of hours students have for taking electives, and even total major and general education hours exceeding graduation requirements for some majors. This last concern is typical of the struggle on many campuses between the faculty of the liberal arts majors and the faculty of the professional programs. The differences in educational philosophy represented by these two groups are common sources of concern and conflict in university-wide curriculum discussions.

The scenario indicates that the task force had developed a proposal that was ready for the entire faculty to consider. The participants were asked to indicate to what

extent they would support and encourage others to support the proposal. The only cue that was content-oriented was the cue that states that the proposal reduces the number of general education courses offered by the participant's department more than other departments, or vice versa. It was anticipated that for some participants this would be the primary determining factor in their decision to support or not support the proposal. For some it may have been a strong influence only in the case that the proposal reduces the general education offerings in their own department.

The other two cues are at the heart of this study, operationalizing the two focal constructs of collaboration and expressed substantive conflict. The collaboration cue does not use the term, collaboration, in order to avoid influencing responses as a result of diverse meanings attached to the term. Instead, the cue describes a collaborative behavior and a non-collaborative behavior. In the collaborative case the cue states, "the focus of most of the task force deliberations has been on the university mission and university goals" and in the non-collaborative case the case states, "the focus of most of the task force deliberations has been on departmental issues and positions." The expressed substantive conflict cue likewise does not use the term, conflict, since it carries negative connotation for many people. Instead, the conflict cue distinguishes between an open expression of differing ideas and perspectives with a statement that, "members of the task force have readily expressed their different perspectives on each proposal and issue" and a cautious and limited expression of differences with the statement that, "members of the task force have been guarded in their contributions and have been judicious in expressing their views."

Again, a distinctive of this study is the use of decision modeling to examine decision process constructs and relationships rather than specific content relationships. Therefore, this decision modeling exercise asked participants to decide on their level of

support for a proposal, not on the basis of the specific content of the proposal, but primarily on the characteristics of the process that generated the proposal. Because of the inclusion of the one cue, participants are allowed the opportunity to reduce the decision to the only content information available if that is their preference.

But the impetus behind this study is to examine the interrelationship between collaboration and expressed substantive conflict in the strategic decision process. The theory drawn upon would indicate that the relationship between collaboration and conflict is not just an additive linear relationship. Rather, the effect of collaboration on decision commitment is dependent on the level of expressed substantive conflict and the effect of expressed substantive conflict on decision commitment is dependent on the level of collaboration. Therefore, it was expected that whether the main effects are significant or not, the interaction effect would be significant.

If the evidence supports this expected relationship, it would be a major departure form previous decision modeling results. As decision modeling has been used to capture the human judgment process, there has been limited success in finding evidence to support any significant interaction effect or curvilinear relationships among decision criteria and decision outcomes. It has been concluded, generally, that decision makers do not employ as complex a system of judgment as they might believe. In the case of this study, the expected interaction was driven by the specific theoretical relationship between the constructs of collaboration and conflict. On the other hand, the theoretical arguments of the Capital Asset Pricing Model, studied by Stahl and Christoph as a basis for corporate divesture decisions, includes an interaction component and was not found to be significant in the results of their study (Stahl, 1989).

The influence of the university's willingness to accept and even encourage open expression of differing viewpoints and creative ideas, described by Schwenk (1997) as a

tolerance for eccentricity, was built into the decision scenario as additional information. Schwenk's argument that efforts to improve the level of decision quality by encouraging the expression of diverse perspectives will likely fail without such an organizational tolerance provided the basis for including this organizational characteristic as an intervening influence. The further information section of the decision exercise describes the presence of this organizational characteristic with the statement that, "the university president and the administrative team have encouraged and fostered an atmosphere of innovation and willingness to challenge the norm" and its absence with the statement that, "the university president and the administrative team **have not** encouraged and fostered an atmosphere of innovation and willingness to challenge the norm."

The resulting design of three decision criteria with two levels of each criterion, Decision A, Further Information (with two levels), and Decision B provide a double replicate of a 2 x 2 x 2 factorial experiment yielding a total of 16 hypothetical decision scenarios. Figure 4 shows an example from the decision modeling instrument.

The decision modeling exercise also included a few questions that obtained demographic data about the respondent. The first question asks how long the respondent has been a professor at the university with categories of less two years, between two and five years, between five and ten years, and more than ten years. The second question asks whether the respondent is a member of a liberal arts department or a professional program department. The final question asks whether the respondent's departmental major requirements are subject to external professional accreditation guidelines.

Scenario 1

The following are characteristics of the proposal and the process through which the proposal has been developed:

1 The focus of most of the task force deliberations has been on **departmental issues and positions**.

2 Members of the task force have been **guarded in their contributions** and have been **judicious in expressing their views**.

3 The proposal under consideration will **reduce** the number of general education courses offered by **other departments** more than those offered by your department.

Decision A:

Given the above characteristics of the proposal and decision process, indicate how strongly you would support and encourage others to support the proposal brought before the faculty:

No Support										Complete Support
0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

FURTHER INFORMATION ABOUT SCENARIO 1:

The university president and the administrative team **have** encouraged and fostered an atmosphere of innovation and willingness to challenge the norm.

Decision B:

Given all the above characteristics of the proposal and decision process, indicate how strongly you would support and encourage others to support the proposal brought before the faculty:

No Support										Complete Support
0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%

Figure 4. Example from the Decision-Modeling Instrument

A pretest was sent to a small number of faculty members to evaluate the wording and clarity of the decision-modeling instrument. The results from the pretest and other feedback were used to revise the instrument to increase the number of usable responses and reduce the amount of bias from confusing or ambiguous wording.

Hypotheses

The following hypotheses, stated in null form, were developed from the collaboration and expressed substantive conflict model as it was operationalized in the context of the faculty decision-making process.

H1: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the relative reduction in general education offerings in the faculty member's department.

H2: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the degree of collaboration leading to the task force proposal.

H3: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the level of expressed substantive conflict leading to the task force proposal.

H4: There is no statistically significant two-way interaction between the degree of collaboration and the level of expressed substantive conflict leading to the task force proposal.

H5: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the degree of tolerance for eccentricity by the university leading to the task force proposal.

H6: There is no statistically significant difference among the cue weights calculated for each of the sample universities.

The Regression Model

The regression model that expresses these anticipated relationships leading to Decision A and that were used to test these relationships is:

$$Y_j = B_1(X_{1j}) + B_2(X_{2j}) + B_3(X_{3j}) + B_4(X_{2j}X_{3j})$$

$$j = 1,2, \ldots, 16$$

Where

Y_j = % of support for the task force proposal (Decision A);

B_1 = standardized regression coefficient or importance attributed to relative reduction in departmental course offerings;

X_{1j} = relative reduction in departmental course offerings of task force proposal j;

B_2 = standardized regression coefficient or importance attributed to degree of collaboration;

X_{2j} = degree of collaboration leading to task force proposal j;

B_3 = standardized regression coefficient or importance attributed to level of expressed substantive conflict;

X_{3j} = level of expressed substantive conflict leading to task force proposal j;

B_4 = standardized regression coefficient or importance attributed to interaction between X_2 and X_3.

To test the effect of the university's tolerance for eccentricity, the following regression equation was also used and the results from Decision B were compared to the results of Decision A.

$$Y_j = B_1(X_{1j}) + B_2(X_{2j}) + B_3(X_{3j}) + B_4(X_{2j}X_{3j}) + B_5(X_{4j})$$

$j = 1,2, \ldots, 16$

Where

Y_j = % of support for the task force proposal (Decision B);

B_1 = standardized regression coefficient or importance attributed to relative reduction in departmental course offerings;

X_{1j} = relative reduction in departmental course offerings of task force proposal j;

B_2 = standardized regression coefficient or importance attributed to degree of collaboration;

X_{2j} = degree of collaboration leading to task force proposal j;

B_3 = standardized regression coefficient or importance attributed to level of expressed substantive conflict;

X_{3j} = level of expressed substantive conflict leading to task force proposal j;

B_4 = standardized regression coefficient or importance attributed to interaction between X_2 and X_3;

B_5 = standardized regression coefficient or importance attributed to degree of tolerance for eccentricity;

X_{4j} = degree of tolerance for eccentricity leading to task force proposal j.

CHAPTER 4

RESULTS

The data described and analyzed in this chapter were gathered from the decision exercise distributed to general education revision committee members at selected CCCU schools. The process used to select the respondents, to request their participation, and to distribute the decision exercise is described in the first section. Next, the results from the individual respondents' decision exercises are analyzed. Finally, the results from the total sample and the separate schools are analyzed to determine the extent to which the hypotheses are supported.

Sample Schools

A list of CCCU member schools in Indiana, Illinois, Michigan, and Ohio was compiled in order to identify the potential sample schools. The Vice President for Academic Affairs at Indiana Wesleyan University emailed the chief academic officers at the identified schools to inquire about the general education review status at their institution. Of the responding schools, three indicated that they had completed a general education review ten or more years ago. Six stated that they had recently completed a review and were in the implementation stage. Four indicated that they were currently conducting a review. No further contact was made with schools that did not respond to the academic officer's request, or the three schools that had conducted general education reviews more than ten years earlier. The ten schools that had conducted reviews in recent years or were currently conducting such a review were contacted by email to inquire further about participating in this research study. If the chief academic

officer indicated who the review committee chairperson was, contact with the chairperson was initiated. Otherwise, further correspondence with the chief academic officer was pursued.

A brief description of the research study was given and a request was made to provide a list of the review committee membership. Responses from five schools provided review committee members' names, while two chief academic officers responded with reservations about their committee members' participation in this study. Further correspondence with these two schools never sufficiently relieved the concerns and participation was not effected. Requests were sent to the review committee members at the five responding schools briefly describing the study and requesting their participation.

Concerns about the length of the decision exercise and the potential response rate, prompted a different approach to the distribution of the data-gathering instrument. Instead of sending the instrument to the prospective participant in the mail, a request was made to meet in person with each to introduce the research and the decision exercise, and to answer any questions. In addition to providing information, the intent was to make a personal connection with the potential respondent and to create further interest in the research study.

Over a two-month period, interviews were scheduled and completed with prospective respondents at the five CCCU member schools. The interviews lasted from 20 minutes to 60 minutes. The individuals were receptive and the discussion was open and informative. Many shared about their experience with the revision process and the committee's group interaction. In each case the individual indicated that he or she would be willing to participate in the study by completing the decision exercise.

In addition to the individual meetings, the general education review committee chair at one of the schools that were in the midst of the review process (School 4), indicated that a brief opportunity to meet with the whole committee during their regular weekly meeting would be appropriate. The 40% response rate from this group was much lower than the rest of the schools. One possible explanation for the lower response rate was the lack of time and opportunity to talk face-to-face with the potential respondent and make the personal connection with each member of the committee.

Another possible explanation for the lower response rate was the open status of the review process. Some might have thought they did not have enough general education experience yet to complete the decision exercise. The lack of opportunity to discuss more completely the nature of the exercise and to answer questions one-on-one may have led to such a misunderstanding. The other school that had not completed the review process is an interesting comparison. At School 5, contact was made with eleven prospective participants. Only five responded to the request for an appointment, but all five completed the decision exercise. Again, the opportunity to spend time individually with each of the five prospective respondents may have contributed to a higher response rate.

An explanation for the lower response to the initial request for an appointment at School 5 may have been that the chief academic officer did not endorse this research study as the other four schools did. The six non-respondents may not have been aware of this lack of endorsement, but the letter of request did not mention the chief academic officer by name nor imply any endorsement.

A total of 66 requests for participation were made. Through personal meetings and the one group meeting at School 4, 55 decision exercises were distributed. A total of 46 decision exercises were returned of which 44 were completed and usable. In one

of the two unusable responses, the individual completed approximately half of the exercise and noted that it was requiring too much effort. In the other case, the individual indicated that the value of the instrument was questionable and declined to answer any questions.

The overall response rate as a percent of decision exercises distributed was 83.6% and the total number of responses as a percent of all requests for participation was 69.6%. The responses as they breakdown per school is presented in Table 2.

In addition to university identification, three other items of demographic data were gathered for each respondent. The first was the length of time the respondent had been a member of the present institution. Of the 44 usable responses, 24 (55%) had been at their schools more than 10 years. Another 13 (30%) had been at their present schools between 5 and 10 years. The generalization would seem to be that general education

Table 2. Response Rate

	School 1	School 2	School 3	School 4	School 5	Total
Requests for participation	25	11	9	10	11	66
Exercises distributed	23	9	8	10	5	55
Responses	20	9	8	4	5	46
Response rate	86.9%	100.0%	100.0%	40.0%	100.0%	83.6%
Percent of requests made	80.0%	81.8%	88.8%	40.0%	45.4%	69.6%
Usable responses	19	8	8	4	5	44
Total number of faculty members	105	113	40	50	82	390

review committee members are appointed at least in part because of their tenure, possibly reflecting their long-term knowledge of the institution and its values, as well as their commitment to the institution. The complete demographic data are presented in Table 3.

The second demographic characteristic was the distinction between the liberal arts and professional nature of the programs that the respondents represented. Of the 44 respondents, 27 (61%) were members of liberal arts programs and 15 (34%) were from professional programs. A majority of review committee membership represents liberal arts programs, but there is a substantial representation, as well, from professional programs. Across the schools, the liberal arts representation ranges from 53% to 75% of the committee. Each of the five schools has a liberal arts heritage, but a growing number of students are choosing professional programs. With a single set of general education requirements for all students, it seems logical to expect representation from programs across campus.

An additional factor involved is the growing pressure to increase the number of credit hours required in professional programs and the resulting tension between general education required hours and major required hours is rising. As a result, the third demographic characteristic gathered was the distinction between programs with external professional accreditation requirements and those without. Of the 44 respondents, 21 did represent programs with external accreditation and 20 represented programs without. There was less consistency across schools for this characteristic. Later the results of tests to determine whether these demographic characteristics provide any additional explanation to the results of this study will be discussed.

Table 3. Demographic Data

	Total		School 1		School 2		School 3		School 4		School 5	
Tenure	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
< 2 years	1	2	1	5	0	0	0	0	0	0	0	0
2 – 5 years	4	9	2	11	0	0	0	0	1	25	1	20
5 – 10 years	13	30	7	37	2	25	2	25	0	0	2	40
> 10 years	24	55	8	42	6	75	6	75	2	50	2	40
Non-responses	2	5	1	5	0	0	0	0	1	25	0	0
	44	100	19	100	8	100	8	100	4	100	5	100
Liberal Arts - Professional												
Liberal Arts	27	61	10	53	6	75	5	63	3	75	3	60
Professional	15	34	8	42	2	25	3	38	0	0	2	40
Non-responses	2	5	1	5	0	0	0	0	1	25	0	0
	44	100	19	100	8	100	8	100	4	100	5	100
Program Accreditation												
Yes	21	48	10	53	4	50	2	25	1	25	4	80
No	20	45	7	37	4	50	6	75	2	50	1	20
Non-responses	3	7	2	11	0	0	0	0	1	25	0	0
	44	100	19	100	8	100	8	100	4	100	5	100

Regressions for Individual Respondents

The regression analysis was first performed for each individual respondent by regressing Decision A on the variables 1) collaboration, 2) expressed substantive conflict, 3) relative reduction in general education offerings, and 4) the interaction between collaboration and expressed substantive conflict. The individual R^2 for this model of three main effects and one interaction ranged from a low of .435 to a high of 1.000. The average individual R^2 was .797. Table 4 shows the breakdown in ten percentage point ranges. Of the 44 individual R^2, 35 are above .700. Of the 44 individual regression equations, 39 had F values that were significant at the .05 level or better, 36 of those were significant at the .01 level or better.

For the five respondents whose individual regression equations had F values that were not significant at the .05 level, it is appropriate to ask whether these responses should be discarded. The decision will be based on whether these responses are borderline cases or whether they are essentially random data and distorting the overall

Table 4. Individual Regression Equation R^2

Range	Frequency
.900 - 1.000	16
.800 - .899	9
.700 - .799	10
.600 - .699	3
.500 - .599	3
.400 - .499	3
Total	44

model. Table 5 shows the R^2 and F statistics for each of the five cases. The R^2 range from .435 to .537 and the F value significance levels range from .057 to .147. A preliminary decision was made to consider the five cases borderline within the context of the interaction model and to retain them within the sample for further examination.

The interaction of the collaboration variable and the expressed substantive conflict variable is an important part of the conceptual model developed in Chapter 2. As indicated above in the overview of the individual regression equations, the first regression analysis was performed using an equation that included the interaction term. Eight of the 44 individual regression equations have an interaction term with a beta coefficient that is significant at the .05 level or better. Of the eight, there are three individual regression equations whose significant interaction term has a negative beta coefficient. Such a negative interaction between collaboration and expressed substantive conflict would indicate that when both characteristics are present in the group decision making process, the members of the group would be less likely to

Table 5. Borderline Individual Cases

	R^2	F value	F sig
1	.435	2.12	.147
2	.537	3.19	.057
3	.509	2.85	.076
4	.456	2.30	.123
5	.468	2.42	.111

support the group's decision. This is contrary to the proposed conceptual model and is less supportive of the conceptual model than the absence of any interaction at all.

The remaining five individual regression equations with significant interaction terms have an average R^2 of .800 and all have F values that are significant at the .01 level or better. The average R^2 for these five respondents drops to .646 when the interaction term is removed from the equation. In four of the five cases the regression equation has neither a significant main effect for collaboration nor a significant main effect for expressed substantive conflict. The fifth case has significant main effects for both variables. Even though these five individual regression equations are supportive of the conceptual model, there is not enough evidence of the interaction effect throughout the sample to provide support for the interaction portion of the proposed model. Therefore the remainder of the discussion of the individual respondents will focus on the results using a revised regression equation that omits the interaction term.

Running the individual regressions again without the interaction term results in a lower average R^2 for the total sample, reduced from .797 to .760. One or more of the independent variables in the three main effects model - collaboration, expressed substantive conflict, or relative reduction - had a beta coefficient that was significant at the .05 level or better for 43 of the 44 individual regression equations. The beta coefficient for the collaboration variable was significant in 30 of the individual regressions (68% of the total), and 23 were significant at the .01 level or better. Across the five schools, the collaboration variable was significant in at least 50% and up to 100% of each school's respondents. The expressed substantive conflict variable was significant in 29 of the 44 individual regressions (66%) with 25 of those significant at the .01 level or better. Again the percentage range across schools was from a low of 47% to a high of 100%. The third variable, relative reduction, was significant in 19 cases (43%) with 13 of

those significant at .01 level or better. Table 6 shows comparative frequencies of significant beta coefficients.

The individual regression equations can be categorized by the number of independent variables with significant coefficients. With three independent variables, categories can be set for individuals with one significant variable, two significant variables, or all three significant variables. Twelve of the 44 individual regression equations had only one independent variable with a significant beta coefficient. Nine of the 12 have R^2 below the average of .760 and the other three were between .900 and 1.000. Collaboration was the single significant variable in two of the cases, expressed substantive conflict was the significant variable in three cases, and relative reduction was the single significant variable in 7 of the 12 cases.

A combination of two independent variables was significant in 27 of the individual regression equations. In 19 of those cases, the combination of collaboration and expressed substantive conflict was significant. In 15 of the 19 cases both variables were

Table 6. Significant Beta Coefficients (.05 level or better)

	Total		**School 1**		**School 2**		**School 3**		**School 4**		**School 5**	
No. of respondents	44		19		8		8		4		5	
	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%	Freq	%
Collaboration	30	68	12	63	4	50	5	62	4	100	5	100
Expressed Substantive Conflict	29	66	9	47	7	87	6	75	4	100	3	60
Relative Reduction	19	43	11	58	4	50	2	25	0	0	2	100

significant at the .01 level or better. Collaboration and relative reduction were both significant in 5 of the 27 individual regressions with two significant independent variables. The other 3 cases were combinations of expressed substantive conflict and relative reduction. The average R^2 for the 27 cases with two significant variables is .802. The average within the three subgroups did not vary much from that overall average. They were .797, .798, and .844 for 1) collaboration and expressed substantive conflict, 2) collaboration and relative reduction, and 3) expressed substantive conflict and relative reduction, respectively.

Finally, there were only four individual regression equations with all three independent variables being significant, but the average R^2 for these four was .906. Even though the range of R^2 values overlap among the categories, the average for each category increases consistently as the number of variable that are significant increases (.643, .802, .906). The summary of these category results is shown in Table 7.

The five individual cases whose regression equation F values were not significant at the .05 level in the three main effects and interaction model can now be examined further. In this three main effects model, four of the five cases have at least one significant variable. The R^2, the overall significance level (F value), and individual significant variables are shown in Table 8.

Cases 3 and 5 are significant at the .05 level in this 3 main effects model. Case 5 is an interesting situation with the overall regression equation significant at the .05 level but without any of the three independent variables being significant at the .05 level. Two of the three independent variables for Case 5 are significant at a level of .059. The other three cases (1, 2 and 4) have F values that are significant at a level above .05 but below .07. It would appear that the earlier decision to consider the cases of these five respondents as borderline is an appropriate decision. Although the average R^2 is

Table 7. Significant Variables in the Individual Regression Equations

Significant Variables	Frequency		Ave. R^2	
0 independent variables		1		.468
1 independent variable				
Collaboration	2		.659	
Expressed Substantive Conflict	3		.599	
Relative Reduction	7		.658	
Total		12		.643
2 independent variables				
Collaboration – Expressed Substantive Conflict	19		.797	
Collaboration - Relative Reduction	5		.798	
Expressed Substantive Conflict - Relative Reduction	3		.844	
Total		27		.802
All 3 independent variables		4		.906
Sample Total		44		.760

Table 8. Borderline Individual Cases in the Three Main Effects Model

	R^2	F value	F sig	Significant Variables
1	.435	3.08	.069	Relative reduction .05
2	.463	3.44	.052	Relative reduction .05
3	.491	3.86	.038	Relative reduction .01
4	.449	3.26	.059	Expressed substantive conflict .05
5	.468	3.52	.049	none

increased from .760 to .799 if these five cases were removed from the sample, it appears that they are not random and are borderline cases. Therefore they will not be removed from the sample for the rest of this study.

Relative Weights

Relative weights for the beta coefficients for each individual regression equation were calculated using the following formula

$$RW_i = B_i^2/R^2$$

Where

RW_i = the relative weight for cue i;

B_i^2 = the standardized regression coefficient for cue i;

R^2 = the square of the multiple correlation coefficient.

Once the relative weights were calculated, they were multiplied by 100 and will be discussed in percent (%) notation. The relative weights are useful for gaining a better understanding of the relative strength of the decision criteria for each respondent and meaningfully comparing the decision criteria among respondents. Relative weights for the regression model for the sample as a whole and each university can also be determined. These group results will be discussed later in this chapter.

Even though 43 of 44 individual regression equations have one or more of the three independent variables with significant beta coefficients, it was clear in the previous discussion of categories that there is a wide variety of combinations of variables used by different individuals in making their commitment decisions. The following discussion of relative weights on the individual regression equations will further develop that idea.

For the sample as a whole, the range of the relative weights for each of the independent variables is extremely wide. The lower end of the range is 0% for all three variables and the upper end is 90 to 100%. The average relative weights for the three independent variables are all in the low 30s (percent).

For School 1 the range and average relative weight is very similar to the sample as a whole. The range is narrower for the other schools that have smaller representations, but 50% or larger in every case except relative reduction for School 4 at 19.6%. Likewise, the average relative weight varies more for the other schools, but is less than 50% in each case, with the exception of the variable collaboration for School 4. Both of these observations (a wide range and a low average for each independent variable) indicate a diversity of decision criteria among the individual revision committee members. One additional observation from ranking the average relative weights can be made. For the sample of 44, expressed substantive conflict is the highest average relative weight, collaboration is the second highest, and relative reduction is a close third. Looking at each school's average relative weights, relative reduction is the highest in School 1, expressed substantive conflict is the highest in Schools 2 and 3, and collaboration is the highest in Schools 4 and 5. Not only is there a diversity of decision criteria among individuals, but there seems to be a diversity of decision criteria importance across schools. The complete summary of relative weight ranges and averages are shown in Table 9.

Table 9. Relative Weights

	Low	High	Range	Average	Rank
Total Sample					
Collaboration	0%	90%	90%	32%	2
Expressed Conflict	0	98	98	36	1
Relative Reduction	0	100	100	32	3
School 1					
Collaboration	0	90	90	30	2
Expressed Conflict	0	89	89	30	3
Relative Reduction	0	99	99	39	1
School 2					
Collaboration	0	50	50	18	3
Expressed Conflict	3	81	78	41	1
Relative Reduction	0	94	94	39	2
School 3					
Collaboration	0	63	63	28	2
Expressed Conflict	0	98	98	47	1
Relative Reduction	0	100	100	23	3
School 4					
Collaboration	20	76	55	58	1
Expressed Conflict	9	76	67	35	2
Relative Reduction	0	19	19	6	3
School 5					
Collaboration	23	87	64	45	1
Expressed Conflict	0	66	66	29	2
Relative Reduction	0	76	76	25	3

All of the discussion to this point has been focused on the results of the individual regression equations for Decision A in the form of the three main effects model (with and without interaction). The decision exercise also asks respondents to make a second decision (Decision B) based on further information concerning the university's encouragement of challenging the norm. This variable has been labeled as tolerance for eccentricity and shifts the analysis to a four main effects model.

Of the 44 individual regression equations for this new four main effects model, 20 (45%) have a significant tolerance for eccentricity beta coefficient at the .05 level or better, 13 of which are significant at the .01 level or better. The beta coefficients from this second decision are used to calculate a new set of relative weights that include the tolerance for eccentricity variable. Since these relative weights add to 100% for each regression equation, any weight given to this variable will reduce the remaining weight to be spread across the other three variables. Since there are 20 individual equations with a significant beta coefficient for the tolerance for eccentricity variable, at least for these 20 equations there will be a substantial shift in regression weights.

For the sample as a whole the range of relative weights for the tolerance for eccentricity variable is 0% to 86%. The lower end of the range for the other 3 variables is 0% as it was in Decision A and the upper end of the range is reduced only slightly, from 90%, 98%, 100% to 92%, 91%, 98% for collaboration, expressed substantive conflict, and relative reduction, respectively. As this additional information is built into the decision process and an additional variable added to the regression equations, the pattern of wide diversity in decision criteria among individual revision committee members remains. Some decision makers use the new variable extensively and others ignore it. The average relative weight for tolerance for eccentricity is 22% and while the other three variables' averages are reduced as expected, they are still higher than the

tolerance for eccentricity averages at 26%, 27%, 24%. Tolerance for eccentricity, as the new independent variable, has a similar impact on the relative weights of each school with the exception of School 4 in which the range is 0% to 28% and the average relative weight is 7%.

Ranking the average relative weights for each school offers an interesting observation. Even though tolerance for eccentricity is ranked fourth for the total sample, it is not ranked fourth for any of the schools. For three schools it is ranked third and for the other two schools it is second. In this situation, the diversity of the criteria least taken into consideration by different decision makers is highlighted. The complete summary of relative weights for Decision B is provided in Table 10.

The last page of the decision exercise asked the respondents to identify the relative weights that they believed they used in selecting their level of support for each decision. They were asked to allocate 100% between collaboration, expressed substantive conflict, relative reduction and tolerance for eccentricity, even though these variable names were replaced by the wording that was used throughout the decision exercise. (As discussed earlier, terms like conflict and collaboration were avoided on the decision exercise because of the bias inherent in their usage). Figure 5 shows this portion of the decision exercise.

These subjective weights provided by each respondent can be compared to the relative weights calculated from the individual regression equations for Decision B (which includes the tolerance for eccentricity variable) to see how well respondents know or are aware of their decision criteria.

A very consistent pattern among the 44 respondents' subjective weights was to underestimate the influence of the most important criterion and to overestimate the

Table 10. Relative Weights (With Eccentricity)

	Low	High	Range	Ave	Rank
Total Sample					
Collaboration	0%	92%	92%	26%	2
Expressed Conflict	0	91	91	27	1
Relative Reduction	0	98	98	24	3
Eccentricity	0	86	86	22	**4**
School 1					
Collaboration	0	83	83	21	4
Expressed Conflict	0	91	91	23	3
Relative Reduction	0	98	98	29	1
Eccentricity	0	86	86	25	**2**
School 2					
Collaboration	0	62	62	17	4
Expressed Conflict	2	67	65	29	2
Relative Reduction	1	92	91	33	1
Eccentricity	0	61	61	19	**3**
School 3					
Collaboration	0	67	67	28	2
Expressed Conflict	0	75	75	35	1
Relative Reduction	0	66	66	16	4
Eccentricity	0	80	79	19	**3**
School 4					
Collaboration	15	76	61	57	1
Expressed Conflict	13	55	42	30	2
Relative Reduction	0	13	13	4	4
Eccentricity	0	28	28	7	**3**
School 5					
Collaboration	3	92	89	33	1
Expressed Conflict	0	62	61	19	3
Relative Reduction	0	58	58	16	4
Eccentricity	1	58	57	29	**2**

Estimating Relative Weights for the Proposal and Process Characteristics

After you have completed the decision making exercise, please indicate below the relative weight you believe you have placed on each of the characteristics as you worked your way through the various scenarios. Distribute 100 points among the four characteristics, giving the most points to the characteristic that you believe is the most important in determining your support for the general education proposals.

Characteristic	Points
Deliberations focused on departmental versus university interests	
Willingness to express differing views on proposal ideas	
Relative reduction in departmental course offerings	
University encouragement of innovation and change	
Total	100

Figure 5. Subjective Weights Request Form

influence of the least important criterion. In other words, the set of subjective weights provided by most respondents was substantially narrower in range than the relative weights determined from the respondents' decisions on the exercise. In 31 of the 44 cases, the relative weight of the most important criterion was more than 10 percentage points higher than the most important subjective weight provided. The average difference of those 31 respondents' most important criterion was 29 percentage points. Another 10 respondents' highest ranked relative weight was less than 10 percentage points above the highest ranked subjective weight. In only three cases was the highest ranked relative weight lower than the subjective weight. The overall average difference between the highest ranked relative weight and highest ranked subjective weight was 20 percentage points.

At the other end of the rankings, the relative weights of the least important criteria were lower than the subjective weights for most of the respondents. In 34 cases the lowest ranked relative weight was more than 1 percentage point lower than the lowest ranked subjective weight and the average difference of those 34 was 9 percentage points. In five cases there was less than 1 percentage point difference between the relative weights and subjective weights and in the other five cases the lowest ranked relative weight was not lower than the subjective weight. The overall average difference was 6 percentage points. This tendency to underestimate the roles of the most important criterion and overestimate the role of the least important criteria has been noted before.

Further, in comparing the rank order of each individual respondent's subjective weights and relative weights, 17 of the 44 respondents' rankings (38%) match for all four variables. In six more cases the first two rankings match and in another six, the first and second rankings were reversed. In the next six the highest rank matches along with a

match of the third or fourth rank. Finally in two more cases only the highest rank matches. As Table 11 summarizes, 37 of the 44 individual respondents' rankings represent either a complete match of all ranks or a partial match of the most important (influential) variables.

A paired t-test was performed for the 44 respondents on each independent variable to provide a statistical conclusion on the ranking comparisons. For the sample as a whole there were no significant differences for any of the four variables, as Table 12 shows. It appears that the sample of 44 revision committee members exhibit a high level of insight to their decision criteria and the relative importance of the different factors. This conclusion is tempered only by the previously stated observation that they tend to understate the importance of the highest rank and overstate the importance of the lowest rank.

Table 11. Comparison of Relative Weight and Subjective Weight Rankings

Extent of Matching Weights	**Frequency**
All 4 match	17
1 and 2 match (3 and 4 reversed)	6
1 and 2 reversed (3 and 4 match)	6
1 and 3 match (2 and 4 reversed)	2
1 and 4 match (2 and 3 reversed)	4
Only 1 match (2, 3, and 4 mixed)	2
Other	7
Total	44

Table 12. Comparison of Relative Weights and Subjective Weights for Each Variable

	Collaboration	Expressed Conflict	Relative Reduction	Eccentricity
Relative weight (average)	26.6%	27.0%	24.1%	22.3%
Subjective weight (average)	30.5	27.2	21.0	21.3
t-value	1.19	.06	-.98	-.33
Significance Level				

Group Regression Results

The discussion of the results to this point has focused on the individual regression equations for each of the 44 respondents. This section will discuss the results of performing the regression on the sample group as a whole. Instead of 44 individual regression equations, there will be one for the entire sample. The results of this regression analysis will allow each of the hypotheses developed in this study to be tested. As in the case of the individual regression equations, the group regression analysis will begin with the three main effects and interaction model. Again, the conceptual model developed in Chapter 2 provides the rationale for testing the full three main effects and interaction model initially.

In contrast to the average R^2 for the 44 individual regression equations of .797 with a range of .435 to 1.000, the group R^2 was .242. This difference between the average individual R^2 and the group R^2 has been found frequently in decision exercise studies in the past. The conclusion is often made that this lower group R^2 is an indication of the diversity of decision criteria among the decision makers. The group R^2

in this study is even lower than those earlier studies even though the average individual R^2 is comparable. It appears that the diversity in decision criteria among general education revision committee members is even more pronounced than it is in other decision contexts. Another distinction in this study, as discussed in the previous chapters, is the primary focus on decision process criteria, rather than the content of the decision under study. Perhaps there is less agreement on appropriate group decision process characteristics than there is on the appropriate decision content factors to be taken into consideration.

A group regression equation was determined for each university and a similar comparison was made between the average individual R^2 and the group R^2. There is a similar large drop in the group R^2 in each case. The group R^2 for School 1 and School 2 are very close to the group R^2 for the total sample. But the group R^2 for Schools 3, 4 and 5 at .364, .443, and .410 respectively, are much higher than the total sample. Much of this distinction is probably a result of the smaller number of respondents (especially in Schools 4 and 5) and the potentially lower degree of diversity among the decision criteria of five committee members than those of twenty committee members. Table 13 provides the average individual R^2 and the group R^2 figures for the total sample and each school.

Table 13. Group R^2

	Total	**School 1**	**School 2**	**School 3**	**School 4**	**School 5**
No. of respondents	44	19	8	8	4	5
Ave. individual R^2	.797	.764	.753	.843	.872	.865
Group R^2	.242	.240	.233	.364	.443	.410

Relative Reduction in Departmental Offerings

Hypothesis 1 states that there is no significant effect of relative reduction on the level of decision commitment.

> H1: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the relative reduction in general education offerings in the faculty member's department.

This is the only one of the independent variables that is a decision content variable. The focus of this study is on group decision process variables, but it was anticipated that some general education revision committee members would include this content characteristic in their decision criteria and that for some it would be a key factor. As was seen in the discussion of the individual regression equations, relative reduction was a significant factor for many respondents. For seven of the respondents it was their only significant independent variable, and for 12 others it was significant along with one or two other significant independent variables. Therefore, even though the individual regression results indicated that relative reduction was either a very important factor or an insignificant factor in the revision committee member's decision, it is not surprising that it would be significant for the total sample group. The t-value was 6.85 and the significance level was less than .0001, and Hypothesis 1 is therefore rejected. Table 14 shows the group regression results for relative reduction and the other independent variables.

Collaboration and Expressed Substantive Conflict

Collaboration, along with expressed substantive conflict, is the central focus of the proposed group decision process model developed in this study. Hypotheses 2, 3

and 4 state in null form the relationships that are derived from the conceptual model developed earlier.

H2: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the degree of collaboration leading to the task force proposal.

H3: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the level of expressed substantive conflict leading to the task force proposal.

H4: There is no statistically significant two-way interaction between the degree of collaboration and the level of expressed substantive conflict leading to the task force proposal.

The main effect for collaboration was tested in the group regression equation and resulted in a t-value of 4.69 and a significance level of less than .0001. Table 14 shows the results of the test for the collaboration main effect for the total sample.

The other key independent variable in the conceptual model is expressed substantive conflict. As in the cases of the other independent variables, the individual regression equations indicated some respondents relying heavily on this group characteristic and others considering it unimportant. The group regression equation for the total sample resulted in a t-value of 5.93 and a significance level of less than .0001 for the main effect. Table 14 shows the results of the test for the expressed substantive conflict main effect for the total sample.

Before any conclusions can be drawn for collaboration and expressed substantive conflict, the proposed interaction effect must be tested. The individual regression equations found only eight individual equations with significant interaction effects. Of those eight, three were interactions with negative beta coefficients. The results of the group regression equation for the total sample group are, therefore, not

surprising. The t-value for the interaction term is 1.71 and is not significant at the .05 level. Table 14 shows the interaction effect results.

In summary, the group regression equation for the three main effects and interaction model resulted in a significant main effect for collaboration and a significant main effect for expressed substantive conflict. The interaction effect between collaboration and expressed substantive conflict, however, was not found to be significant and therefore Hypothesis 4 is not rejected. But before any conclusion is drawn for Hypotheses 2 and 3, the group regression results for an equation with the interaction term removed should be examined. The group regression equation was determined for the three main effects model (with no interaction term). Even though the group R^2 is decreased from .242 to .239 when the interaction term is removed, the t-value for the collaboration variable increases from 4.69 to 8.35 with a corresponding increase in the level of significance. This provides strong support for rejecting Hypothesis 1 and concluding that collaborative behavior in the group decision process does significantly affect the degree of support revision committee members lend to revision proposals.

Table 14. Group Regression Results for Three Main Effects and Interaction Model

	Relative Reduction	**Collaboration**	**Expressed Substantive Conflict**	**Interaction**
t-value	6.854	4.690	5.932	1.715
Significance level	.0001	.0001	.0001	.087

Likewise the group regression equation for the three main effects model also provide a t-value for the expressed substantive conflict variable that has increased from 5.93 to 10.09 with a significance level well beyond .0001. This provides strong reason to reject Hypothesis 3 and conclude that the extent to which revision committee members readily express their diverse perspectives during the group decision process does have a significant effect on group members' decision commitment.

The results discussed above for the relative reduction variable were based on the group regression equation that included the interaction term. When the group regression equation is determined without the interaction term present, the results for the relative reduction variable are virtually unaffected. The relative reduction t-values for the total sample are only slightly different with no change in the resulting significance levels. Therefore, the discussion of the relative reduction results does not need to be revised.

Group Regression Relative Weights

Since all three independent variables have a significant effect, it is useful to calculate the relative weights at the group level. Expressed substantive conflict is the group decision process variable with the greatest influence in the sample as a whole with a relative weight of 47% and relative reduction is the independent variable with least influence with a relative weight of 21%.

The group regression performed for each university can be used to determine whether the diversity of decision criteria among individual respondents discussed earlier is matched by any diversity of decision criteria across the universities. School 1 regression results identify relative reduction as the most important decision factor with a relative weight of 48%. Expressed substantive conflict is the most important decision characteristic for Schools 2 and 3 with relative weights of 57% and 67%, respectively.

And collaboration is the most influential decision factor for Schools 4 and 5 with relative weights of 64% and 53%, respectively. Not only do the revision committee members from different schools have different decision factors that are most influential in determining the support for group decisions, the difference between the most important factor and the next most important factor is of interest. The smallest difference is 17 percentage points and the average difference is 25 percentage points among the five universities. The difference for the total sample is 14 percentage points. In other words, the differences in which factors are the most important between schools are not slight. Table 15 shows relative weights by school and for the sample as a whole.

Tolerance for Eccentricity

Hypothesis 5 addresses the question of whether the university's tolerance for eccentricity has a significant effect on the level of support for general education revision proposals.

H5: There is no statistically significant effect on the faculty member's support for the general education revision proposal that is explained by the degree of tolerance for eccentricity by the university leading to the task force proposal.

Table 15. Relative Weights

	Total	**School 1**	**School 2**	**School 3**	**School 4**	**School 5**
Collaboration	32%	21%	11%	33%	64%	53%
Expressed Substantive Conflict	47	31	57	67	36	17
Relative Reduction	21	48	32	0	0	30

Decision B provides the data on the respondents' use of the additional information concerning the university's encouragement of a willingness to challenge the norm. in the earlier discussion of the individual regression equations, 20 respondents were shown to have significant beta coefficients for the tolerance for eccentricity variable in Decision B. To test for whether the additional information has a significant effect on the revision committee members' decisions, a paired t-test was performed on the Decision A level of support and the Decision B level of support. The total sample provides 700 pairs for this test (16 scenarios for each of the 44 respondents less 4 items of missing data). The resulting t-value of 3.26 is significant at the .001 level.

This provides the support needed to reject Hypothesis 5 and conclude that the level of tolerance for eccentricity exhibited by the university does have a significant impact on the revision committee member's support for a particular revision proposal. Table 16 shows the results for the paired t-tests for tolerance for eccentricity for the total sample.

Table 16. Tolerance for Eccentricity – Paired t-tests

Number of pairs	700
t-value	3.26
Significance level	.001

Differences Among Schools

Throughout the discussion of the individual and group regression results, the similarities and differences between the five schools represented in the sample have been identified. Hypothesis 6 addresses this matter of regression model variation among schools.

> H6: There is no statistically significant difference among the cue weights calculated for each of the sample universities.

Hypothesis 6 can be more formally tested with the use of Chow's F test. A series of two-by-two comparisons have been used to test for differences among the universities. Table 17 shows the results of Chow's F test for each comparison with the F-values and significance levels. Eight of the ten two-way comparisons are significant at the .05 level or greater.

The differences among schools that have been noted in various preceding discussions and highlighted in Table 15 (providing the group regression relative weights for each school and the sample as a whole) are confirmed with the results of these tests. Even though the differences are not significant for all ten combinations, there is sufficient evidence to conclude that there are differences between the decision criteria used by general education revision committee members from different schools. The difference between the average individual R^2 and the group R^2 for each school is large, as is the case for the sample as a whole (as shown in Table 13). Therefore, within the sample, decision models differ from individual to individual, from school to school, and within each school.

Table 17. Comparing Schools with Chow's F test

Schools Compared		F-value	Sig
School 1	School 2	2.704	.05
School 1	School 3	7.743	.0001
School 1	School 4	4.326	.01
School 1	School 5	4.051	.01
School 2	School 3	2.638	.05
School 2	School 4	4.455	.01
School 2	School 5	1.426	
School 3	School 4	2.305	
School 3	School 5	3.655	.01
School 4	School 5	5.906	.001

Demographic Differences

Finally, the demographic data gathered from the decision exercise were used to determine any further explanation of the various levels of support offered by respondents for the general education review proposals. Chow's F test was again used to determine any significant difference between groups defined by the demographic data. Table 18 shows the results of Chow's F-test for the demographic differences and the F-values and significant levels.

The distinction between review committee members from liberal arts programs and members from professional programs is a natural distinction in regards to the content of general education revision proposals. A frequently made assumption is that faculty members from liberal arts programs would oppose any proposal to reduce overall general education requirements and specifically any proposal to reduce requirements of

Table 18. Chow's F-test to Identify Demographic Differences

Demographic Differences		F value	Sig
Liberal Arts	Professional	1.441	
Accreditation-Yes	Accreditation-No	3.276	.05
Tenure 1&2	Tenure 3&4	0.810	
Tenure 12&3	Tenure 4	0.672	

courses from their own departments. A corresponding assumption is frequently made that faculty members from professional programs would promote any such proposals to reduce general education requirements. Since the focus of this study is the group decision process, these assumptions are less relevant than process specific preferences. What is not anticipated is whether there would be any differences in group process preferences between respondents from liberal arts and professional programs. The results of Chow's F-test indicate that there is no significant difference in the respondents' support decisions that can be attributed to this distinction in programs.

A similar comparison between respondents from programs that are subject to external accreditation guidelines and those with no external accreditation was tested for any affect on support decisions. Again, the expectation is that faculty members from programs subject to external accreditation would promote any general education revision proposal that would reduce the number of general education requirements. This expectation is based on the tendency for external accreditation to increase the number of program requirements and major hours. It is not uncommon in liberal arts colleges and universities to have major requirements and general education requirements that

combine for more than the total university required hours for graduation. This contributes to increased tension between forces for maintaining current general education requirements and those attempting to satisfy accreditation requirements. But, this again is a decision content matter. As before, the question is whether there will be any group decision process preferences that differ with those who face accreditation pressure and those who do not. The results of Chow's F-test in this case indicate that there is a significant difference in the decision criteria of those who are and those who are not accountable to external accreditation. Further investigation into this difference would be useful.

The final demographic characteristic is the respondent's length of service at the current university. The respondent was asked to indicated which four categories they fit in - less than two years, between two and five years, between five and ten years, and more than ten years. Tests were performed on two comparisons - 1) those with less than five years of service and those with more than five years and 2) those with less than ten years and those with more than ten years. One expectation might be that those with longer tenure might be more at ease with an open discussion of differences of perspectives and ideas. Loyalty to the department or to the university could be expected to increase with tenure. In both of the tests for tenure distinctions, there is no significant difference in decision criteria established.

Of the three types of demographic data gathered, there is only a significant difference found in the case of the external accreditation distinction. On the other hand, the previous analysis identified significant individual specific and university specific support decision criteria.

CHAPTER 5

CONCLUSIONS

This chapter will summarize the findings from this research study and draw appropriate conclusions from those findings. In addition, future direction for research that can build on this study will be identified.

Conceptual Foundation

This study was designed to develop a new model of key characteristics of the group decision process when the decision at hand is at the strategic level with all the attending complexity and uncertainty as well as the diversity of perspective that is brought to the process by the group members. The conceptual model developed in Chapter 2 is focused on two key group decision *process* characteristics. The first is collaboration, which is group interactive behavior that is driven by the desire to promote the goals and objectives of the organization as a whole, rather than the interest of each group member or the segment of the organization he or she represents. The second group decision process characteristic is expressed substantive conflict, which is group interactive behavior that exhibits a willingness to promote a particular position or idea within the group discussion, even in the face of various other (often opposing) positions offered by other group members.

The model provides the basis for propositions that indicate that the presence of these two group decision process characteristics will lead to a higher level of consensus among the group members. Consensus has been defined for this study as ownership of

the group decision leading to a willingness to support the group decision and its successful implementation.

Additive Model

The intent was to test this set of relationships in a relevant and rigorous manner. To achieve this purpose, the methodology chosen was decision modeling based on behavioral decision theory. The design of the data-gathering instrument, which asks each respondent to make multiple decisions, provides data to be analyzed at both the individual level and the sample group level.

The data did provide evidence to support an additive version of the conceptual model. At the individual level, 52% of the respondents used a decision model that included both the collaboration variable and the expressed substantive conflict variable, indicating that the presence of each group decision process characteristics led them to support the group decision to a higher extent. (An additional 30% of the respondents used one or the other of theses two key characteristics as part of their decision criteria.)

At the group level, the evidence strongly supports an additive model with both collaboration and expressed substantive conflict as additive components of the decision model. This conclusion would appear to make a notable addition to the strategic management literature in terms of both the independent variables and the dependent variable. The strategy process literature is not only less extensive than the strategy content literature, but most of the process literature focuses on components or phases of an effective decision process without addressing the group interaction at the heart of group decisions. Therefore, the focus of this study on characteristics of group decision interaction and the significant relationships found is of merit. More specifically, an explicit combination of the collaboration construct and the substantive conflict construct

as independent variables and testing their impact on decision commitment breaks new ground. Using a decision outcome such as decision commitment is an improvement over the traditional dependent variable for strategic management research (financial performance).

While it may seem intuitively appropriate to expect decision commitment to be based on the specific content of the decision, this study provides evidence that decision commitment is based on characteristics of the group decision process in addition to the decision content. In some cases the decision commitment is based on process characteristics in spite of the decision content.

The one decision content variable built into the decision exercise was relative reduction, which indicates whether the group decision reduced the number of course offerings in the respondent's department more than reductions in other departments across campus. It was anticipated that some respondents would consider this decision content characteristic to be an important factor in their decision criteria. It also provided the respondent the opportunity to consider the relative importance of content characteristics versus process characteristics. Sixteen percent of the respondents considered it the only important factor. Not only for those respondents was relative reduction the only significant independent variable, the average relative weight for this content variable was 86%, indicating its dominance among independence variables.

For 27% of the respondents, a combination of the content variable (relative reduction) and one or both of the process variables was employed for their decision commitment criteria. And for 54%, one or both of the process variables were used as decision commitment criteria without regard for the content characteristic of the group decision. Thus, in spite of what others might consider negative decision content in some scenarios, these respondents based their decision on process characteristics only. The

significant impact of these process variables is an important finding, not only for further study of the collaboration and substantive conflict constructs, but also for research on the influence of other group decision *process* variables.

For the sample as a whole, not only is there strong support for the impact of both the process variables, but also there is strong support for the impact of the content variable. An examination of the comparative strength of these independent variables in the group model provides additional insight to these results. The strongest influence is from the expressed substantive conflict process variable (46% relative weight). The next highest influence is from the collaboration process variable (32% relative weight) and the third highest is the relative reduction content variable (22% relative weight).

Again the conclusion from this study would appear to be that not only does decision process matter for group decisions, but that the level of decision commitment is heavily dependent on the extent to which group members feel free to and are willing to express diverse (and even conflicting) perspectives and ideas, as well as the level of collaborative behavior throughout the group decision process.

Interaction Model

The proposed conceptual model is not just an additive linear model. It is argued in Chapter 2 that the process variables, collaboration and expressed substantive conflict, influence the level of decision commitment in an interaction relationship. The influence of collaborative behavior on decision commitment is stronger in the presence of expressed substantive conflict and vice versa. At the individual level 11% of the respondents used the two process characteristics in an interactive manner. Of these five respondents, four used the decision criteria with an interaction effect only, without any main effects. This would imply that collaboration and expressed substantive conflict

only have a significant influence when they are both present in the decision process. Since the average R^2 of these five individuals' models is .80, it would seem apparent that this interaction model is a distinct model among the variety of decision models used by individual members of general education revision committees.

Even though there were not enough respondents using decision criteria that included an interaction effect for the two process variables to result in a significant interaction effect for the sample as a whole, it does create a lot of interest for further research. Effort to continue developing and refining the full conceptual model (with interaction effect) as well as testing the model with other contexts and methodology would be appropriate.

Influence of Organizational Characteristics

Another important conclusion from this study concerns the impact of the organizational characteristic, tolerance for eccentricity, as defined by Schwenk (1997). The tolerance for eccentricity variable was not a component of the conceptual model but was tested as a moderating variable in the decision exercise as additional information. Since there was strong support for the relationship between the two process variables and decision commitment without considering the tolerance for eccentricity variable, this organizational characteristic would not be considered a critical factor. Nevertheless, it is still important to consider the results from Decision B. At the individual level the decision criteria used by 45% of the respondents included the tolerance for eccentricity, even though the recalculated relative weights for each individual resulted in an average relative weight for this variable that ranked fourth among the four independent variables. For the sample as a whole, there was evidence to support a significant increase in the

level of decision commitment when the organization encouraged innovation and the open expression of differing views.

The results of this study and the findings of previous research on the impact of substantive conflict on decision quality (Eisenhardt, Kahwajy, & Bourgeois, 1997) would indicate the potential benefit to many organizations of reconsidering their stance on tolerance for eccentricity. It would seem clear that more research is warranted to investigate the impact of such tolerance on the level of collaboration and expressed substantive conflict. Testing the possibility of reciprocal relationships among these variables would be both challenging and rewarding.

Decision Model Diversity

Previous studies using behavioral decision theory to study strategic decisions have frequently found a pattern of high average individual R^2s and lower group R^2s, indicating a high level of internal consistency within each respondent's decisions, but a lack of consistency across respondents. This variety of decision criteria among different individuals was also found in this study. Again, the simplest representation of this variety is the distinction between those who used only the decision content variable, those who used only the group decision process variables, and those who used some combination of the content and process variables. Discovering whether there was a similar variety of decision criteria across schools in the sample was also a part of the research agenda.

At the individual level, the most notable difference among the schools is the higher degree of influence (average individual relative weight) for the content variable, relative reduction at two of the schools. For three of the schools the content variable is the least influential variable, for one school it is the second most influential, and for one

school it is the most influential. At the group level, the relative weight for relative reduction is much higher for one school than the others. The range of relative weights for relative reduction over the five schools is 48 percentage points.

Also at the group level, the direct comparison of each school with every other school provides more specific evidence of the variation from school to school. Of the ten one-on-one comparisons, eight of the ten are significantly different. The evidence for the impact of the tolerance for eccentricity variable is an additional expression of the variety across schools. For two of the schools, the relative weight for the tolerance for eccentricity variable is the second largest and for the other schools it is the fourth largest. It appears that the variety of decision models used by various individuals is not proportionately distributed across schools. As a result, individuals at some schools are influenced more by decision content characteristics and others by decision process characteristics. In addition, strategy-level decision makers at some schools are under a stronger influence from the school's stance on innovation.

Decision Maker Insight

The previous studies of strategic decision-making using behavior decision theory have found the respondents unable to provide a high level of insight on their own decision criteria. This has been used as an additional benefit of using the decision modeling methodology. In this study the respondents were able to identify the decision criteria they used quite well, even though they understated the magnitude of the factor with the most influence and overstated the magnitude of the least influential factor. It seems natural to raise the question of whether this difference in self-awareness is tied to the shift in this study from decision content variables to decision process variables. It may be that decision makers are more aware of their decision process criteria than their

content criteria. Further research is needed to substantiate any possible distinction in self-awareness of decision criteria.

Generalizability of Findings

Finally, the extent to which these findings can be generalized to group decision processes in other types of organizations needs to be established. The results from the sample of general education revision committee members from Midwestern Christian colleges and universities do have broader application. In spite of their label of academicians, for the context of university-wide general education curriculum decisions with long-term implications, they are members of a strategy-level decision making group. Charged with the responsibility of developing a proposal that would address the diversity of needs and interests of departments across the organization (many of these in direct opposition to each other), these group members accept the challenge of working through the group decision process with their own diversity of personality, experience, and interest characteristics. Even though the *content* of these strategic-level deliberations may be unique to the academic setting and therefore may limit any generalizations of a strategic content nature, the focus of this study has been on the group decision *process*.

The literature on the strategic decision process would indicate that the specific context would on occasion call for a single authoritative figure to make a decision for the organization, based on the best information available at the time and using his or her best judgment. But in those situations where the organization has given the responsibility for a strategic-level decision to a group, there is nothing from the strategic management literature that would indicate that the group decision process would exhibit industry-specific characteristics. One question has been raised concerning the market-based pressure for a quick decision. Some argue that a group decision process that

takes the time to hear and discuss each member's ideas and perspectives and attempts to come to some consensus will delay the decision and its implementation beyond an acceptable timeframe. Eisenhardt and colleagues have studied extensively industries that are characteristically fast-paced and have found a high level of strategic decision performance from top management teams that conduct a group decision process with an extensive degree of expressed substantive conflict. There is no reason to believe, then, that the results of this study would be limited to those organizations that have the luxury of a slower decision timeframe.

The conflict literature is broad-based, representing a variety of disciplines and applications. It is remarkable how much the conclusions concerning conflict within group processes are relevant and applicable across disciplinary lines. The focus of this study on data gathered from the group decision process within one particular industry would not appear to limit the conclusions, then, from being generalized to group decision processes in other organizational settings.

Implications for Future Research

In many of the sections of this chapter, brief references to possible future research have been made. The new direction that this study has taken and the findings of significant relationships among key variables would indicate the value of additional studies to potentially provide support for these relationships and to answer intriguing questions raised by this study. Further research on the impact of group decision *process* characteristics on decision commitment in comparison to decision *content* characteristics is certainly warranted and anticipated. Unresolved is the question of whether individual decision models are, to any significant degree, any more complex than an additive linear relationship would indicate.

But what may be the most intriguing direction for future research is the question raised by this study of what is the nature of the difference between organizations (as represented by the significantly different group models for the five schools of this study). The differences in the group decision models from organization to organization may be a result of a different composition of the strategic decision making group, given the wide variety of individual decision models found in this study. Another possibility is that one or more organizational characteristics influence the relationship between group decision variables and that these organizational characteristics vary across organizations. Even though this study was not designed to specifically investigate these organizational characteristics and how they vary among organizations, this study has shown that there are differences in the organizational decision models and that the decision modeling methodology would be appropriate to discover and test these differences among organizations.

Implications for Management Practice

Another important conclusion from this study focuses on the implications for management practice. It would appear from the results of this study that management should set an example and develop an atmosphere in which organizational members involved in group decisions are encouraged to express their differing ideas and their perspective on others' ideas in a productive manner. Developing such group process skills and learning to avoid the pitfalls of affective conflict may take a concerted training effort.

A more challenging implication for management comes from this study in terms of the collaborative intent and behavior in the group process. Whether decision group members come to the strategic decision process with the intent to further the interests of

their own position and those that they represent or the interests of the larger organization is less a matter of developed skills and more a matter of organizational values and how well those values have been communicated and instilled across the organization.

For both of these group decision process characteristics, management will have to make a long-term, consistent commitment to their development. The increased level of commitment to the successful implementation of group decisions shown by the results of this study, make these group decision process characteristics desirable in strategic level decision contexts. Management's challenge is to get beyond the intellectual assent to these beneficial relationships and make the long-term commitment to their development.

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